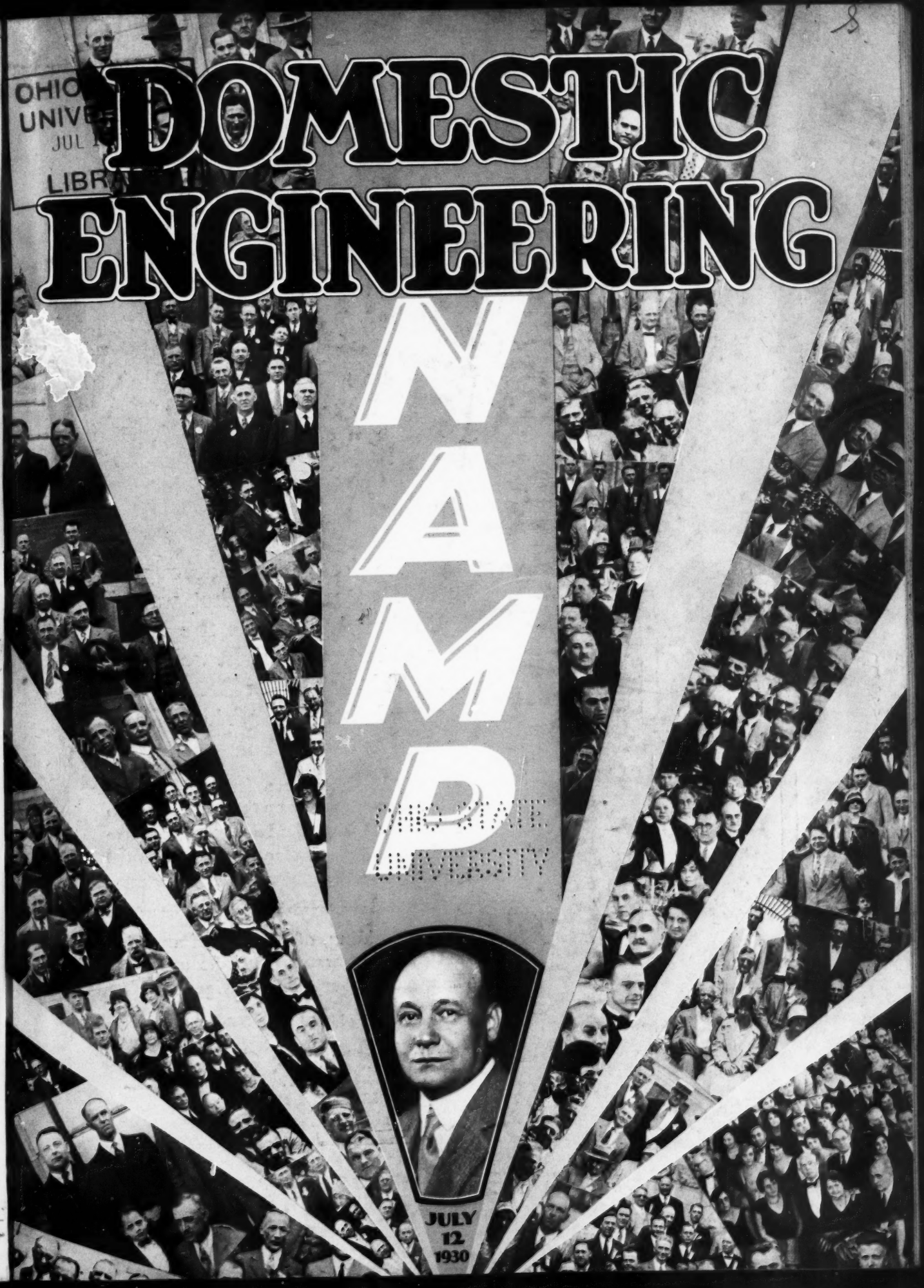
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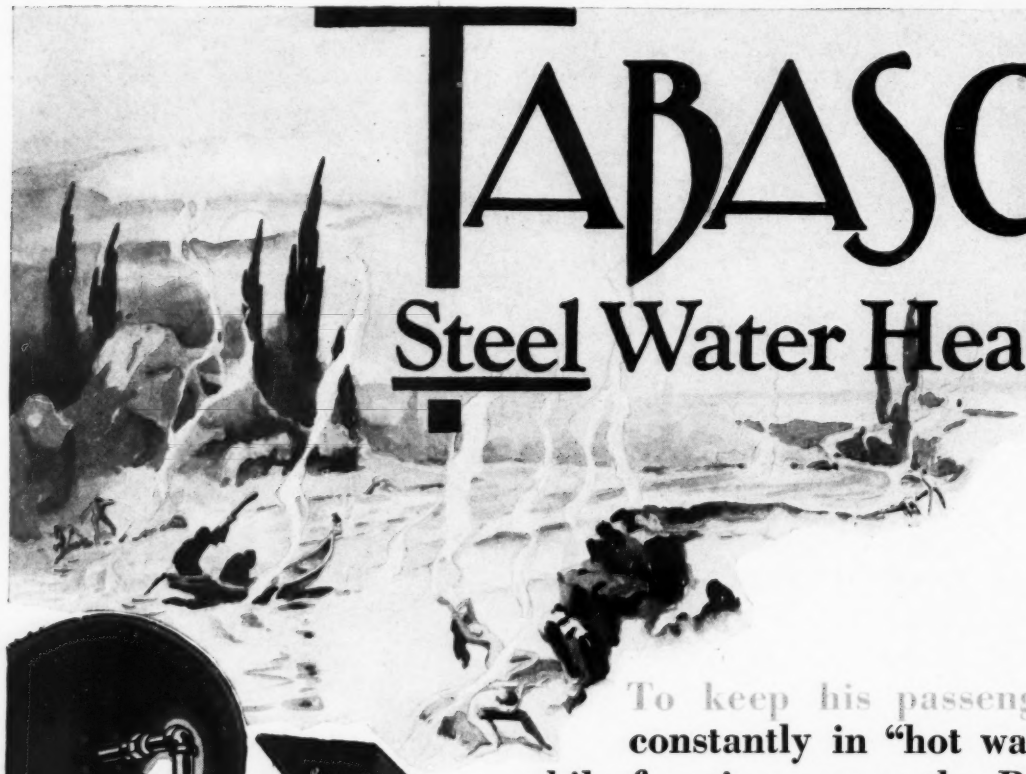
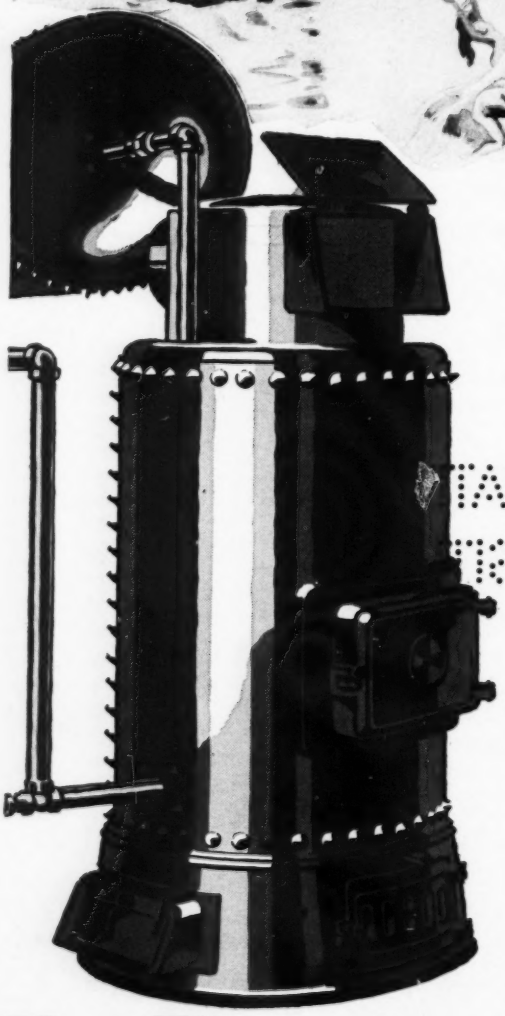
TABASCO

Steel Water Heaters





To keep his passengers constantly in "hot water" while ferrying across the River Styx, old Charon might well have used a Tabasco Water Heater. For this sturdy heater—*of riveted steel*—outlasts the ordinary lifetime.

Built in 17 sizes to heat from 130 to 700 gallons of water per hour, there is a Tabasco for every building. And as the ratings are based on raising water temperatures 50 degrees (instead of the usual 25) they actually do twice the work of ordinary heaters.

Every building, of every kind and size must have hot water. Include a bid on a Tabasco in every job you figure.

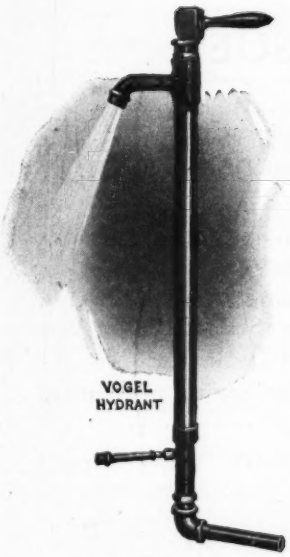
Catalog No. 75 has the details

KEWANEE BOILER CORPORATION
division of American Radiator and Standard Sanitary Corporation
KEWANEE, ILLINOIS
Branches in principal cities
MEMBER OF STEEL HEATING BOILER INSTITUTE

Hot Water is as Necessary as Heat

EVERY JOB WHERE YOU INSTALL VOGEL FROST-PROOF CLOSETS OR HYDRANTS IS A PROFITABLE JOB . . . .

Number One Vogel Frost-Proof Closet.
Simple in operation. Sturdy in construction. Half a million in operation.



Vogel Frost-Proof Hydrant

Don't Neglect This Market

Private and public garages, yards of all sorts, farms, dairies, are all good prospects for Vogel Frost-Proof Hydrants. A great convenience any place.

THERE are sometimes jobs which look good but turn out to be unprofitable because of back calls for repairs, adjustments and other troubles.

But this never happens when you install VOGEL Frost-Proof Closets and Hydrants. When you install a VOGEL the job is done . . . You make your profit and keep it, because VOGEL Closets operate satisfactorily as soon as they are installed, and for years afterward.

Your profit is not only in dollars and cents, but in customer's good will as well, because every VOGEL closet or hydrant you install means one more satisfied customer.

We'll send you folders and blotters on VOGEL Frost-Proof Closets and Hydrants, imprinted with your name and address. Use them to build up your profits and your list of satisfied customers.

See inside back page for VOGEL Selflush advertisement Also see pages 90 and 91

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

VOGEL PATENTED *Frost-Proof* Products

370680

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

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WOLVERINE

"Tested and Guaranteed"

The "Tested and Guaranteed" tag on all Wolverine Compression Work means to the Master Plumber . . . . .

———the highest quality of material and workmanship.

———the most rigid inspection of all parts.

———factory installation under actual operating conditions.

———33 years of engineering knowledge of the Master Plumber's needs.

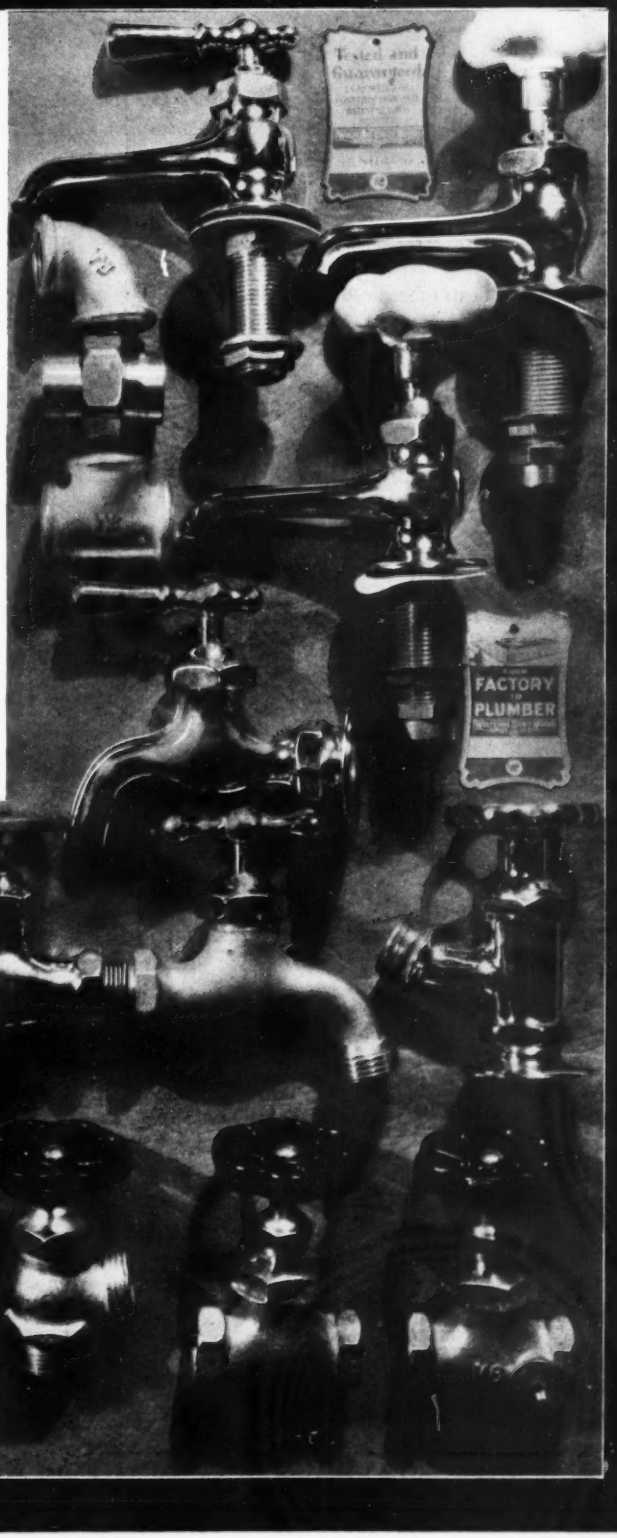
———the integrity of the Wolverine Brass Works behind each tag.

———the assurance to the Master Plumber of many pleased customers by installing Wolverine Dependable Brass Goods.

WOLVERINE BRASS WORKS

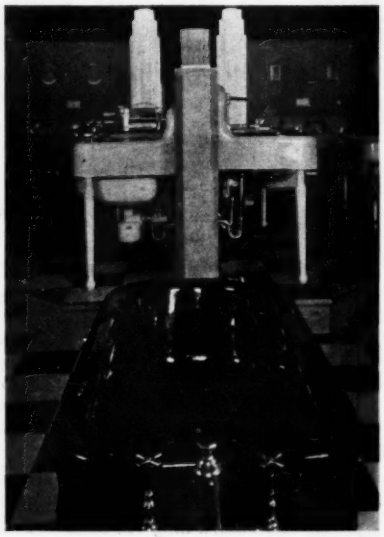
GRAND RAPIDS WB MICHIGAN

We Sell the Retail Plumbing Trade Exclusively



Between Ourselves

JUST as our last issue carried the complete story of the Heating and Piping Contractors National Association convention so does the present issue carry a full report of the convention of the National Association of Master Plumbers. The annual convention has ended and the delegates and guests have returned to their homes; most all of them with the feeling of having experienced an enjoyable and instructive week. Much interest was manifested in the exhibits and the educational program, including a play which was produced before a large crowd. Committees were appointed to study various plans suggested to equip the industry better to meet present day problems and tomorrow's needs. Reports were heard on the "Authorized Dealership Plan," as well as the "Certified Plumbing" plan, which originated in Chicago. The convention gave its approval to the trade practice rules and voted to petition the federal trade commission for a conference. « « « « «



color in plumbing

BEFORE long you may be seeing such slogans as this on the windows of plumbing and heating contractors' establishments, "see us about your interior decorating problems." And it may not be as far away as some of us think. Probably not many contractors have considered themselves in the role of an advisor on interior decoration. But it is worth while considering, for there is no doubt that color in plumbing and heating equipment is here to stay for some time. And if not always color, then heating equipment and plumbing fixtures that possess a decorative quality that will not only harmonize with the rest of the household furnishings but will add a distinctive note of their own. An article in this issue discusses the practical application of color in the bathroom and kitchen. « « « « « « « «

IN THIS ISSUE we have an article that tells some mighty interesting things about the effect of temperature on chimney draft. This article, by H. T. Hall, points out that "temperature is what well may be termed the 'motive power' of the chimney." Mr. Hall starts in with the fact that air, when heated, expands and occupies a greater space than it did before the temperature was raised, resulting in the weight per cubic foot of the heated air being reduced, and explains how the motive power in a chimney varies in proportion to the chimney's height. He further shows that the temperature drop between the fire box and the top of the stack has a vital bearing on the matter of draft.

Thank You!

"I THINK you have the best publication on plumbing and heating printed, so far as I have seen in my almost 70 years at the trade."—John Dunn, of John Dunn & Son, DeKalb, Ill. « « « «

⊡ ⊡ ⊡

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe. «

NOW that trade and industry are going through a period of more intensive analysis of business methods, the plumbing and heating contractor is considering new ways and means of developing business. Many contractors throughout the country are overcoming this situation in various ways, and some of them are doing it very successfully. In nearly all cases, advertising, in some form or other, is playing an important part. On the other hand, many contractors say that they would like to advertise but do not have the time to prepare advertising material, and admit also that they do not have the inclination for such effort. But there is no need in worrying about time or ability: *Domestic Engineering* does the job for the busy man. In every issue, copy for sales letters, newspaper ads, circulars, educational leaflets and ideas for window displays will be found. It is up to the contractor to take advantage of this service. « « « « « « « « «

Your Editor

One City Alone

has invested more than

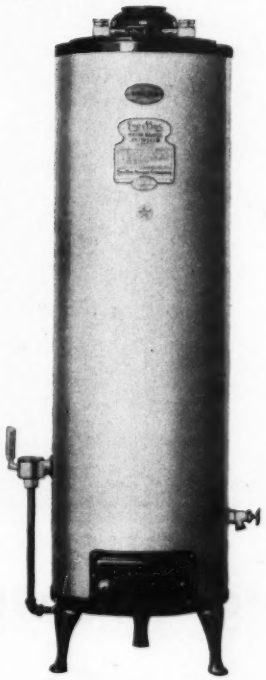
$2,000,000.00

in the

EverHot AUTOMATIC WATER HEATER

WHAT better proof of EverHot superiority and dependability can be given than this simple statement—that the citizens of one city alone have invested more than two million dollars in the EverHot Automatic Water Heater. And many other millions of dollars worth of EverHot Heaters are justifying their choice all over the country.

The growth and popularity of the EverHot has been deserved; its exceptionally trouble-free operation at reasonable cost, with its instant response to the many demands for hot water has made it indispensable to its owners.



Just figure for yourself how much it means to you to recommend and install an appliance like the EverHot. You install one and make a clean profit—but that's not all—for one satisfied customer opens the door to many sales; users are glad to assist you in selling their friends and acquaintances, forming a user-salesman organization that will bring more profit and goodwill to you.

If you don't believe it—buy and use an EverHot yourself—you'll find that your enthusiasm will enable you to down any slight sales resistance you might encounter.

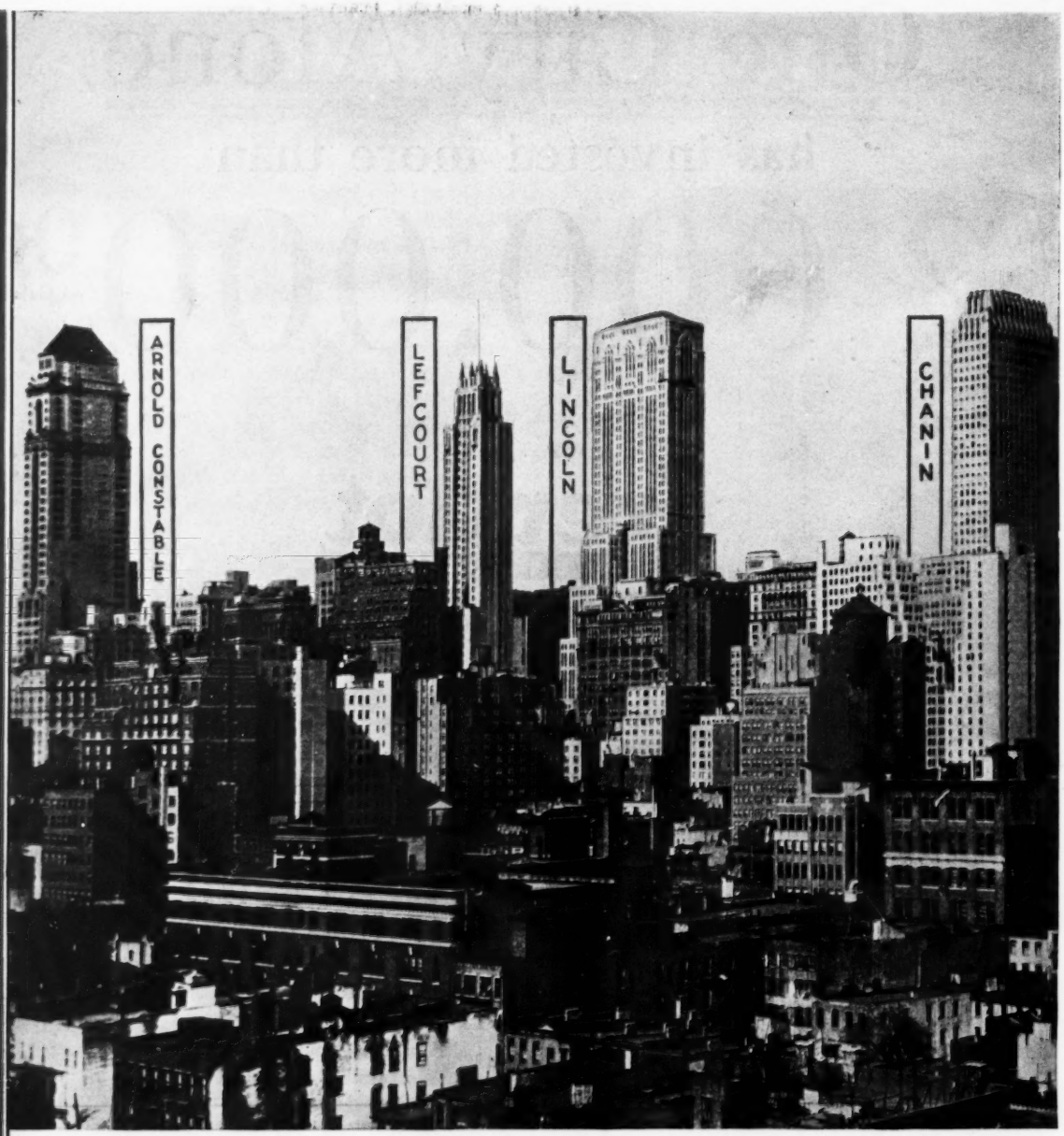
AMERICAN GAS ASSOCIATION APPROVED · CONFORMS WITH NATIONAL SAFETY REQUIREMENTS

Write today for Dealer's Price List and Information folder, and the address of our nearest distributor.

Tested and Approved by Good Housekeeping Institute · GOOD HOUSEKEEPING MAGAZINE

EverHot Heater Company

5211 Wesson Avenue **Detroit, Michigan**

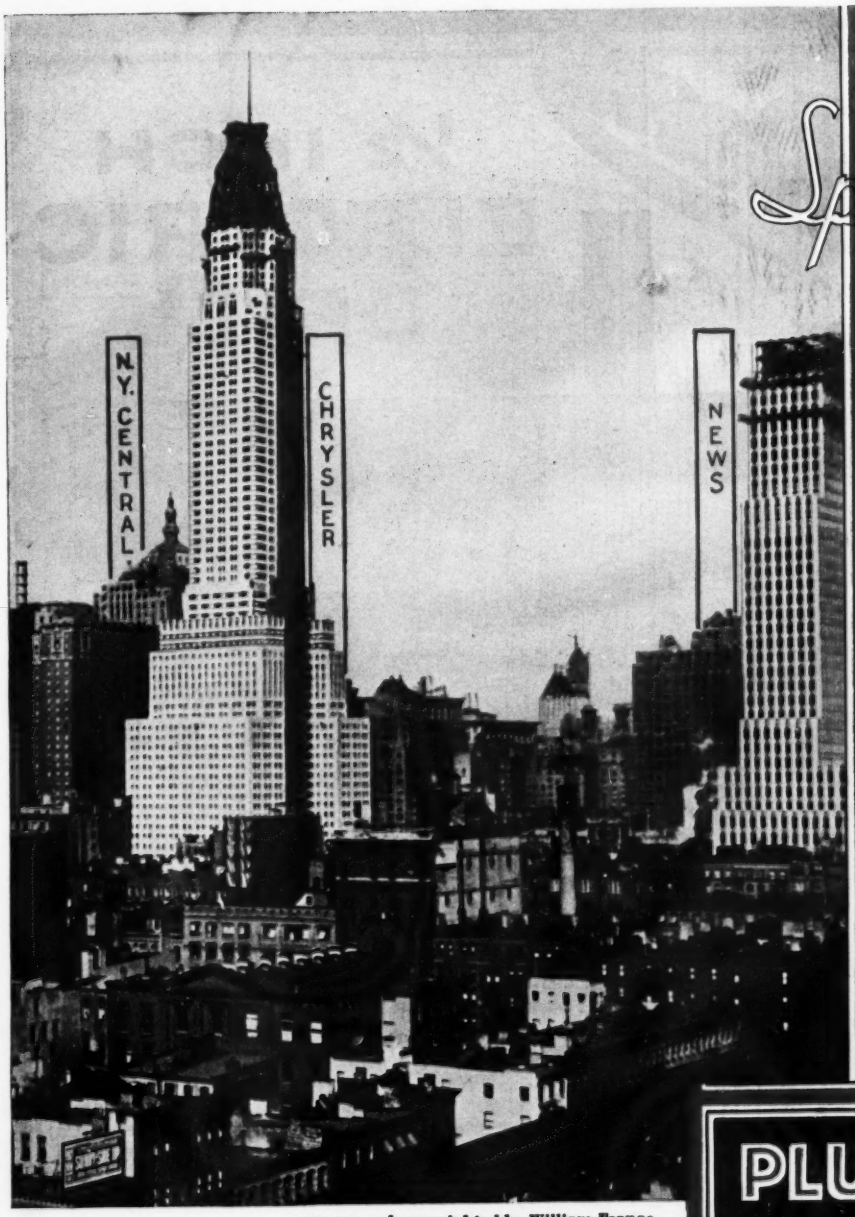


7 Outstanding Walworth installations

All seven of these towering new office buildings are Walworth-equipped. Why? Because the leading architects and contractors know that they can look to Walworth for every requirement of the most up-to-date piping systems that must operate unfailingly and for many years.

In this age of standardization the full line of Walworth products offers an unequaled opportunity for the builder to place unified responsibility on one source of supply.

WALWORTH COMPANY
General Sales Offices: 60 East 42nd St., New York
. DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD .



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Specify

WALWORTH
VALVES
FITTINGS
AND TOOLS

for

PLUMBING
AND
HEATING

on New York's Sky-line

The Walworth products supplied for these buildings include bronze, iron and steel valves and fittings for heating, plumbing and fire protection.

WALWORTH

"Van Dorn"

½ INCH ELECTRIC DRILL

$48.00

A proven tool of inherent power and ruggedness, for any assignment—production work, factory maintenance or any of the thousand and one jobs of the journeyman mechanic and carpenter.

Because of its light weight and high power it is an ideal tool to carry to the job—plumbing, electrical or woodworking. Designed to accommodate straight shank bits—either for wood or steel—its use may be greatly enlarged with Van Dorn Hole Saws, enabling you to increase the capacity of the drill from ½" to 4".

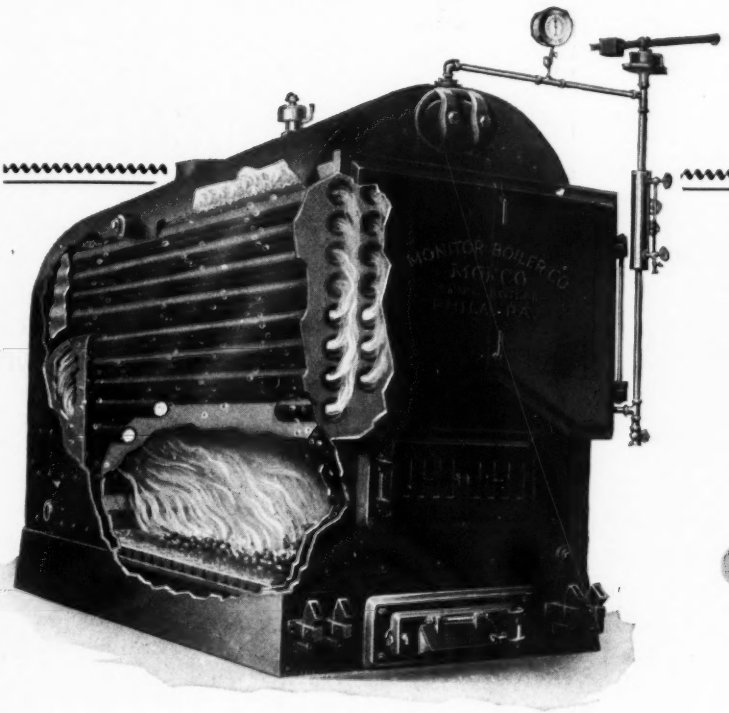
This tool has the powerful Van Dorn-built Universal Motor, which operates on either direct or alternating current, ball-bearing armature and spindle thrust, the well-known Van Dorn safety switch and many other features which insure long, efficient and trouble-free service.

Available for 32, 110, 220 or 250 volts.

Sold through Leading Supply Houses.

THE VAN DORN ELECTRIC TOOL COMPANY, TOWSON, MARYLAND

MONCO



STEEL HEATING BOILERS

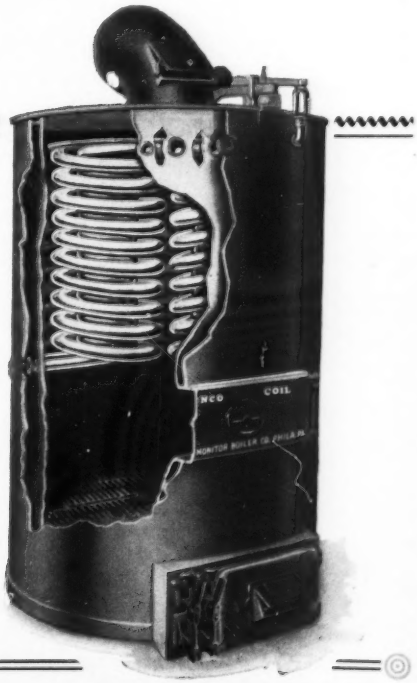
for

COAL OR OIL BURNING

MONCO

COIL HEATING BOILERS

COIL WATER HEATERS



MONITOR BOILER CO., 1505 Race St., Philadelphia, Pa.

Affiliated with United Dry Docks, Inc., New York

for Longer *Service!*

For thirty years Williams' "Vulcans" have been the favorite chain pipe tongs — everywhere. More of them are used than all others combined. GENUINE Improved "Vulcans" provide longer service without increase in cost. When the teeth first in use wear, simply reverse the double-ended jaws — DOUBLE life at no extra expense.

And safe! Each chain is individually proof-tested and CERTIFIED, assuring safety to the operator. Nine sizes for 1/8 to 18-inch pipe. Ask for literature.

J. H. WILLIAMS & CO.
"The Wrench People"
New York BUFFALO Chicago

GENUINE
WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"VULCAN"
IMPROVED CHAIN PIPE TONGS

THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

A Letter from Harry G. Nye

July 12, 1930.

To the Plumbers and Steamfitters of the U. S. A.

"THERE'S MANY AN HONEST HEART"

Friends:

Once in a while I meet some fellow who thinks he is too good for me, and he's right, he is. If there is any man in the world who isn't good enough for him, then he is too good to be any good, in my opinion.

Now, I admit that I say "ain't," and I use a knife where I ought to use a fork, and some days I don't shave, and I wear my pants until they are through, and I swear when it seems necessary.

But if any dude thinks he is a better man than me on account of that, then I just want to tell him that he ain't, or isn't. I may wear my pants through, but I bet at his house his wife wears his.

But of all the lowdown cusses in the world, the one I like least is the man who thinks less of another man because he is a plumber or a steamfitter instead of a bank clerk.

To my mind, the cleanest man in the world is the man who is doing a dirty job. There is dirty work to be done in this world, and he is too clean a man to shove it off onto somebody else.

The real, sure-enough dirty work in this world is being done by the fellow who sticks up his nose at it. I wouldn't trust him as far as you can throw a bull by the tail.

On the other hand, many an honest heart beats under a pair of overalls, and don't forget it. The only man who wears white pants that I admire is a streetcleaner.

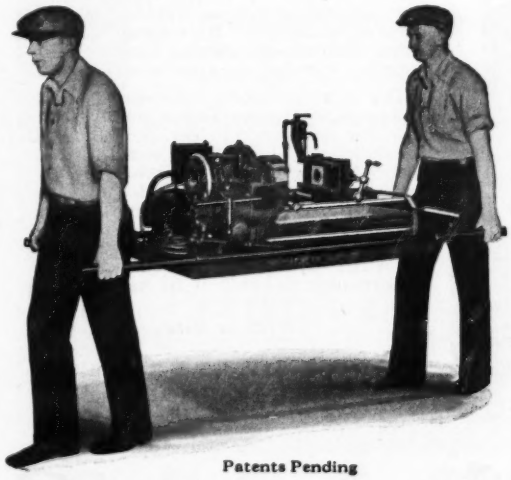
If you held some of these too-nice men up to the light they would look like an x-ray of an ostrich that had just been making a lunch of nuts, bolts and spare parts.

Plumbing or steamfitting is sometimes a dirty job, but the good Lord never made a cleaner one, after all. The man who sticks up his nose at it doesn't smell any too pretty himself.

I don't care who makes the silk shirts, as long as I can be official pipe-tool maker to the he-man.

Sincerely yours,

Harry G. Nye



Patents Pending

"THE LIGHTWEIGHT CHAMPION"

Threads — Cuts Off and Reams

CAPACITY ½ to 2 INCHES

OTHERWISE KNOWN AS

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue « « Chicago, Ill.

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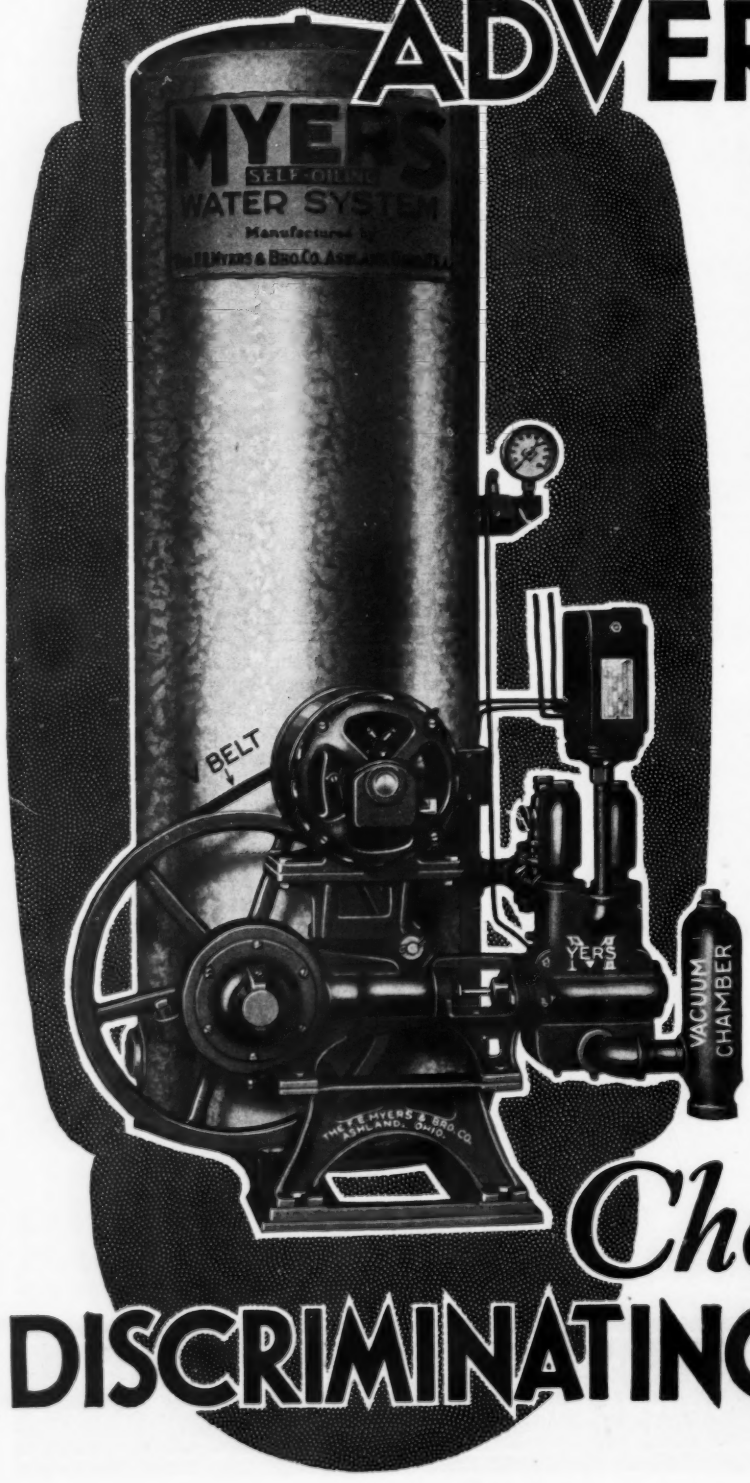
THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

NATIONALLY ADVERTISED



Here we are—right at the beginning of the big summer selling season for Myers Water Systems with a more complete and better advertised line than ever before.

New features, new improvements, new standards of operation. Dependable, high quality outfits that give low-cost, honest service, whatever the conditions or requirements.

Deep or shallow wells, any kind of power, any capacity up to ten thousand gallons of water per hour.

Nationally advertised the year through in leading farm, class and trade publications. And now comes the biggest and most important step of all—a comprehensive campaign in the world's greatest magazine, The Saturday Evening Post. It's under way now and will continue for months to come. Upwards to fifteen millions of new people will be reading about Myers Water Systems. Many of them are prospective purchasers. This business will be yours if you are ready to take care of it.

Action now will bring you ample profit. Month by month power lines are penetrating deeper and deeper into rural communities. Better standards of living are steadily paving the way for running water at the turn of a faucet.

The outdoor world—summer homes and cottages, hotels, resorts, golf courses, summer camps and lodges, welcome the conveniences of running water. Centralized schools, rural churches, public and private institutions, service and filling stations afford a live market for water systems. The field for sales is practically unlimited. The Myers line of Water Systems offers the greatest opportunity to reach it in its entirety.

Write or Wire

THE F. E. MYERS & BRO. CO.
PUMP BUILDERS SINCE 1870
ASHLAND, O.

Choice of DISCRIMINATING BUYERS

DETROIT D VALVES

3 WAYS TO REDUCE INSTALLATION COSTS

1. Use a valve with a positive gate mechanism as a precaution against leaky discs or seats that have to be made tight before the job is turned over.

The "Detroit" Standard Gate Valve, with its parallel seat design, gives you positive closing and double protection against leakage. This valve, once in the line, is there to stay.

2. Use a valve on the dimensions of which you can always depend. "Detroit" Standard Valves are all made in exact conformity with the American Standard.

3. Use a valve sturdy enough to withstand the abuse often incidental to its installation.

Foundry practice in the casting of "Detroit" Standard Valves assures a quality metal which will withstand the alternation of heat and cold in operation.

"Detroit" Valves have been used consistently for years by contractors who realize that there is a substantial saving to them in the use of properly designed and carefully manufactured equipment.

Ask your wholesaler to fill your next order with "Detroit" Valves.

DETROIT BRASS & MALLEABLE WORKS
DETROIT, MICHIGAN

DETROIT VALVES

Manufacturers of a full line of Malleable Fittings, drainage fittings and flange unions. *Distributed only through wholesalers.*

Easy to cut, easy to thread, easy to install

THOUSANDS of plumbing and heating contractors have proved to their own satisfaction that a job piped with Youngstown steel pipe is a more profitable job for them—and a better job for their customers.

Youngstown pipe makes a more profitable job because it is easy to install. Every length is absolutely uniform and true in shape; its threads are clean and deep-cut; and it is easy to cut, thread and fit on the job. All of these factors combine to save installation time, which is reflected in greater net profits. And thousands of installations are proving that Youngstown steel pipe not only saves time in installation, but insures a lasting, satisfactory job as well.

If you are not already using Youngstown steel pipe, try it on your next plumbing, heating or sprinkler system job and see for yourself how easy it is to install.

"270" Broadway, New York City, is also piped with Youngstown pipe in both plumbing and heating systems.

Engineers—
E. H. FAILE & CO.
Builders—
STARRETT BROS.
Heating Contractor—
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Plumbing Contractor—
J. L. MURPHY, Inc.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"

General Offices—Youngstown, Ohio

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SEATTLE—Central Bldg.
ST. LOUIS—525 Louderman Building
YOUNGSTOWN—Stambaugh Bldg.

LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St. London, E. C. England

YOUNGSTOWN

GALVANIZED SHEETS PROTECT ∵ ∵ SAVE WITH STEEL

WISECO

COMBINATION LAVATORY and WASTE FIXTURES

The Standard Of Quality Since 1877

If you want your customers to get the most for their money—sell the WISECO Combination Lavatory and Waste Fixture.

Furnished in either China or All Brass Trim. Long or short spout. Nickel Polished or Chromium Finish.

This fixture will meet your every requirement.

At all leading jobbers.

WISECO TRADE MARK INC.

J. B. WISE, INC., WATERTOWN, N. Y.

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an·open·letter *to all* HEATING AND PLUMBING CONTRACTORS

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HOFFMAN SPECIALTY COMPANY Inc.
Manufacturers of
HOFFMAN VALVES
more heat from less coal
Cable Address - HOFFVALVES NEW YORK
Waterbury, Conn.

Mr. Heating and
Plumbing Contractor:

N O W - - - FOR THE FIRST TIME - - -

heating and plumbing contractors are offered a powerful, localized sales campaign designed to create the biggest fall business ever enjoyed!

This Hoffman Specialty Company Sales Plan reaches a long arm directly into the selected homes of your community and plucks out fat profits heretofore untouched. It brings you right into contact with home-owners who are in need of your services as a heating and plumbing specialist. It gives you an unequaled opportunity to sell your complete line -- from boilers to bath-tubs. It gives you a high-pressure sales force that combs contracts from your territory steadily for eight weeks -- without time and effort on your part.

Its selling effect will be intensified by a strong national advertising campaign appearing in The Saturday Evening Post while your local drive is on.

This Hoffman-izing profit-drive is bound to double and triple your valve business -- it smashes in right at the time when everybody is vitally interested in getting maximum winter comfort, health protection and fuel economies.

Research Bureaus say "Two Billion Dollars will be spent this year in modernizing work".

Who's going to get the heating end of this tremendous sum in your community? We know this much -- that aggressive contractors who sign up with Hoffman will get theirs.

Come in with us! Share in the profits of this golden opportunity. Get the details! We can't explain the whole proposition in this limited space. Just send in the attached coupon and we'll rush you the complete story.

Very truly yours,
HOFFMAN SPECIALTY COMPANY, Inc.
C. V. Haynes
Vice-President and General Sales Manager.

Mail This Today!
for Complete Plan

Sales Campaign Manager
HOFFMAN SPECIALTY COMPANY, INC.
Waterbury, Conn.

Yes! I want to join the Hoffman Drive for Bigger Fall Business. Rush me the details—no obligation.

Name .....

Address .....

City ..... *State* .....

Piatt dealers are literally "making hay while the sun shines." They have no dull seasons—they can sell water heaters the year round. If they have a slack season in oil-burners for furnace application they can keep their organization together and put them right to work selling Piatt water heaters. Every home in city or suburb is a prospect, every season is a *selling* season.

Then—Piatt water heaters have no near competition, there is absolutely nothing like them, they are fully automatic, with no wicks, wires or electrical connections, and they are extremely economical to operate, supplying from ten to fifteen gallons of hot water for one cent. They are easy to install and require very little, if any, service. They provide a continuous flow of steaming hot water for every home which has running water.

Write us about the Piatt proposition, including water heaters, furnace and oil burner built as one unit, oil-burning ranges and cabinet heaters, a full line of sizes to suit every use. Send the coupon today for open territory.

Motor Wheel Corporation, Heater Div., Lansing, Mich.

PIATT

DOMESTIC UTILITIES

Motor Wheel Corporation, Heater Division, Dept. 105
Lansing, Michigan

Send me at once, full information and profit-building plan on the Piatt Appliances. I am not obligating myself but will study the details carefully.

Name .....
(Please print or typewrite)

Street .....

City ..... *State* .....

My Business .....

AN EXTRA PROFIT IN THE MAKE-UP

O-B No. 30 Line
Steam Radiator Valve
O-B No. 35 Line
Packless Steam Radiator Valve
O-B No. 40 Line
Hot Water Radiator Valve

GEORGE PIPKIN (real name on request) is one of the really successful contractors of New York City. Two years ago he secured the contract for installing the plumbing and heating in a group of apartment buildings. When he placed his order for materials, he specified Ohio Brass Gate, Globe and Radiator Valves. It was a large order—large enough to attract attention even in New York.

O. B. Fink, (another pseudonym) a salesman for Ohio Brass, went out to find the reason for Mr. Pipkin's partiality to O-B valves. Fink came right out and asked Pipkin why he had selected Ohio Brass valves in preference to all others.

"Well, it's very simple, Fink," Pipkin replied. "I have found out that Ohio Brass valves cost me less money than any other valves I have ever used."

Although Fink was fairly certain of what the explanation would be, he feigned innocence.

"Up until a few months ago," explained Pipkin, "I used to buy everything of a commodity nature just as cheaply as I could. But one day, after we had had a great amount of trouble with a bunch of radiator valves, I picked up some of your valves and took them out on the job. Well, I was surprised. After I had installed a few of your valves the realization came to me that I had been penny wise and time foolish. I had been saving cents on actual cost by using cheap valves but I had been losing dollars on the extra amount of time required for make-up. Since then, you can bet that I have changed from a bargain hunter to a contractor."

You, too, will ultimately discover that "there's an extra profit in the make-up" when you use Ohio Brass Valves. You might just as well find it out now by buying Ohio Brass Radiator Valves for your next job.

Ohio Brass Company
Mansfield, Ohio
1265V

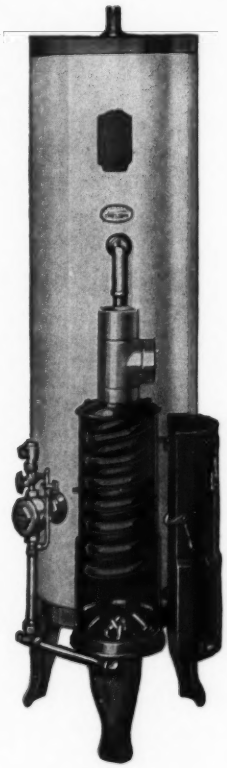
Ohio Brass Co.

NEW YORK PITTSBURGH
PHILADELPHIA CHICAGO
ATLANTA BOSTON CLEVELAND ST. LOUIS
LOS ANGELES
WM. P. HORN CO: SAN FRANCISCO SEATTLE

PORCELAIN INSULATORS
LINE MATERIALS
RAIL BONDS
CAR EQUIPMENT
MINING MATERIALS
VALVES

TIMES DEMAND SOMETHING ABOVE ORDINARY

in features and in price



No. 20SA
List Price $66
Complete

The Hotstream has many exclusive features that make it an exceptional performer—both in sales, and customer satisfaction.

These are the days when Mr. and Mrs. Public shop before they purchase. Glittering claims, flashy beauty are waved away; products are considered and bought on *performance capabilities*.

Such a time is made to order for Hotstream Dealers.

No heater offers purchasers more for the money than the Hotstream Side Arm Automatic. No heater brings dealers such customer-confidence.

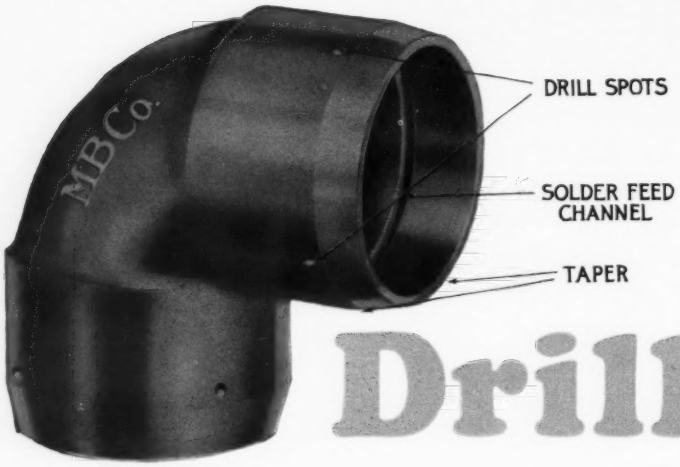
With its Triple Guarantee—engineered right into the design—of life-long tank service, of clean, inviting hot water, of constant day and night service, Hotstream's instant and permanent advantages are immediately evident to your customers.

And every heater sold puts an enthusiastic owner on your sales staff—at not one penny cost.

You'll never have a better opportunity than *right now* to see the selling advantages Hotstream brings you. Don't postpone writing for the complete details—do it now!

THE HOTSTREAM HEATER CO.
"Makers of Heaters that Heat"
CLEVELAND, OHIO

HOTSTREAM
AUTOMATIC STORAGE
HEATERS



Pat. Pending

Why the Drill Spots?

Pat. Pending

Pat. Pending

Pat. Pending

Pat. Pending

Pat. Pending

Mueller STREAMLINE Fittings are provided with drilling location spots closely situated where the taper begins. These spots are for your convenience when drilling the hole for feeding in the solder. Since on anything but a bushing type STREAMLINE fitting, the solder feed hole cannot be previously fixed, there are enough drilling location spots provided so that you may readily choose the most convenient one.

REMEMBER IT IS NECESSARY TO DRILL ONE HOLE ONLY — SOLDER CANNOT BE FED IN SUCCESSFULLY THROUGH THE END OF THE FITTING OR IN ANY OTHER WAY EXCEPT THROUGH THE DRILLED HOLE.

Pat. Pending

On the bushing or cylindrical type of STREAMLINE fittings, the solder feed hole is already drilled when you receive it, simply because you can turn it on the tube to have the hole in any convenient location to feed in the solder. Obviously, the holes in fittings such as elbows, tees, etc., cannot be pre-located and are furnished with drilling location spots. You simply drill through the most convenient one and feed in the solder at this point.

IF A CONNECTION WITH STREAMLINE COPPER WATER TUBE AND FITTINGS IS PROPERLY MADE, THE RESULTING JOB IS ONE OF WHICH YOU CAN BE JUSTLY PROUD.

When making a connection, first brighten the end of the tube to be inserted, with sandpaper, for at least 1½ to 2 inches and also rub the inside of the fitting where the pipe goes into it with sandpaper. EMERY CLOTH WILL NOT DO.

Then apply Mueller non-corrosive solder paste to pipe and fitting. A LIQUID FLUX WILL NOT DO.

Apply blow torch and feed in the solder through the hole you have drilled for the purpose.

The whole principle of making a joint with STREAMLINE Copper Water Tube and fittings is by utilizing one of nature's own laws — that of capillary attraction. The successful application of this law depends upon close tolerances and clean surfaces. Mueller STREAMLINE Copper Water Tube is designed for and intended to be used with STREAMLINE fittings. With this combination and by following the instruction card furnished, failures are impossible.

Let us send you a STREAMLINE solder instruction card and a copy of our catalog — yours for the asking.

Mueller Brass Co.

Port Huron, Mich.

Three Generations of Brass Making

NEW JERSEY'S TALLEST

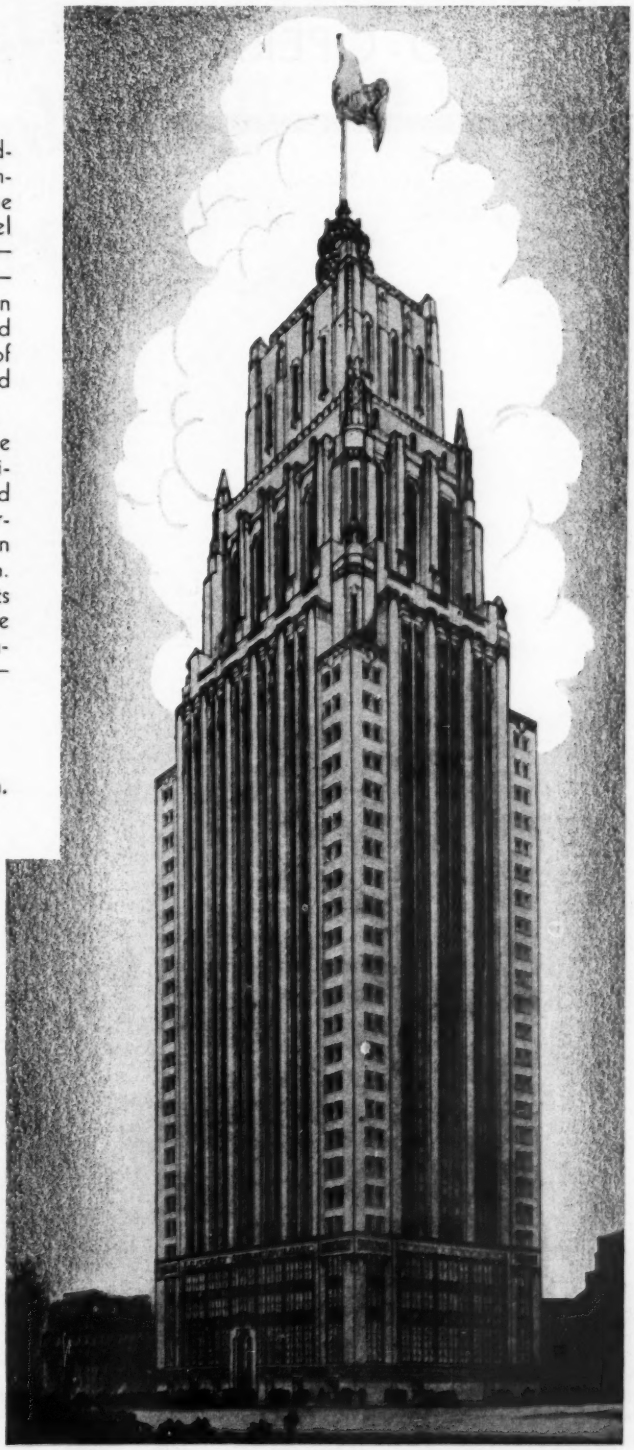
LEFCOURT-NEWARK BUILDING, NEWARK, N. J.
Architect: Frank Grad, Newark, N. J.
Engineer: Eadie, Freund & Campbell, New York City
Plumbing Contractor: Jaehnig & Peoples, Newark, N. J.
Heating Contractor: Schrenell Bros., Newark, N. J.

Unusually effective in interior plan with its commanding and graceful exterior lines, this recently completed building ranks with some of the finest in the land, a structure of which New Jersey may well feel proud. Thirty-seven stories from street to tower—the highest building in the State of New Jersey—the Lefcourt-Newark Building is the latest addition to Newark's skyline. Naturally the architects and engineers, experienced in specifying for some of America's finest buildings, turned to time-tested and quality-proven material.

Thus, as in many previous instances, they chose NATIONAL for the major pipe tonnage. In addition to NATIONAL Pipe for the heating, soil and waste lines, they specified NATIONAL Copper-Steel Pipe for the vent lines and rain leaders as an additional protection against atmospheric corrosion. Many years of experience and numerous service tests have proven that copper-steel pipe gives added life to those lines exposed to alternate wet and dry conditions. Write for Bulletin No. 11, describing—

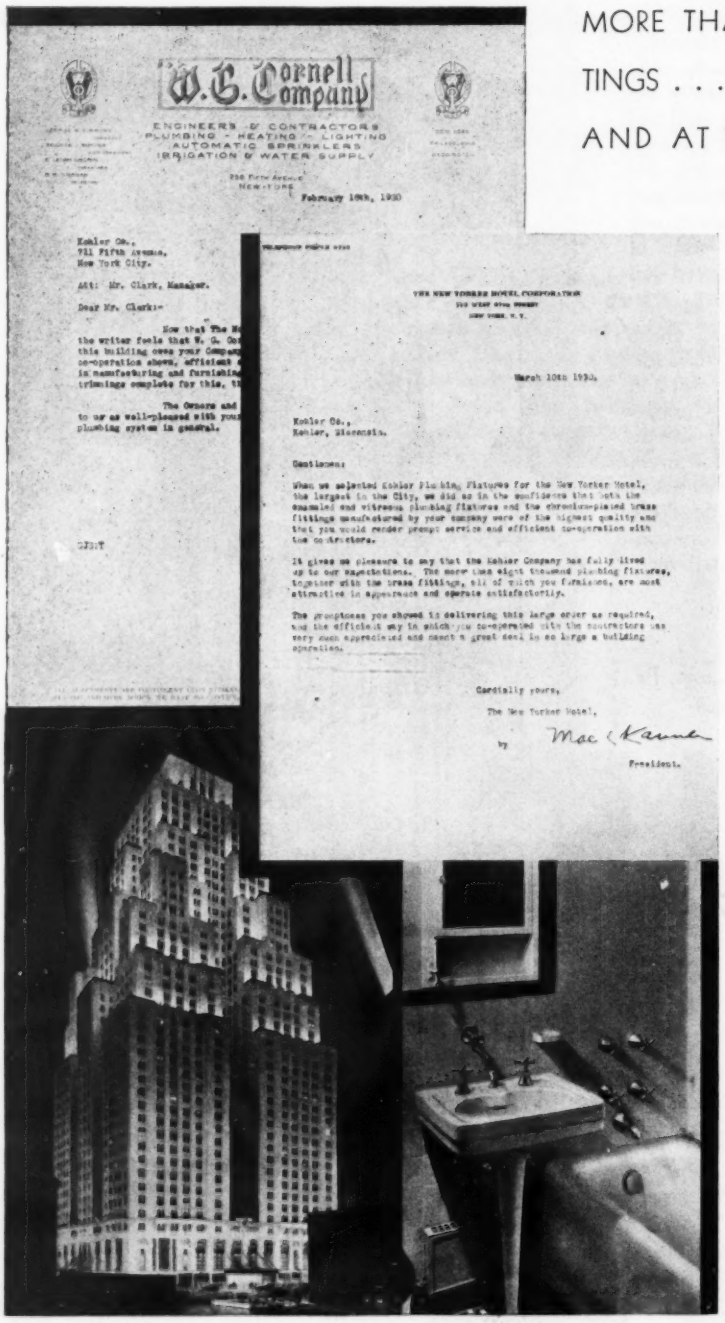
NATIONAL COPPER-STEEL PIPE
The Original Copper-Steel Pipe

NATIONAL TUBE COMPANY—Pittsburgh, Pa.
Subsidiary of United States Steel Corporation



NATIONAL PIPE

"PROMPT DELIVERY . . . EFFICIENT SERVICE . . . FULL CO-OPERATION"



W. G. Cornell Company

ENGINEERS & CONTRACTORS
PLUMBING - HEATING - LIGHTING
AUTOMATIC SPRINKLERS
IRRIGATION & WATER SUPPLY

February 18th, 1930

Kohler Co.,
711 Fifth Avenue,
New York City.

Att: Mr. Clark, Manager.

Dear Mr. Clark:-

Now that The N
the writer feels that W. G. Co
this building owes your Company
co-operation shown, efficient
in manufacturing and furnishing
trimmings complete for this, t

The Owners and
to us as well-pleased with your
plumbing system in general.

DJH:T

THE NEW YORKER HOTEL CORPORATION
[illegible] WEST 43rd STREET
NEW YORK, N. Y.

March 10th 1930.

Kohler Co.,
Kohler, Wisconsin.

Gentlemen:

When we selected Kohler Plumbing Fixtures for the New Yorker Hotel, the largest in the City, we did so in the confidence that both the enameled and vitreous plumbing fixtures and the chromium-plated brass fittings manufactured by your company were of the highest quality and that you would render prompt service and efficient co-operation with the co-tractors.

It gives us pleasure to say that the Kohler Company has fully lived up to our expectations. The more than eight thousand plumbing fixtures, together with the brass fittings, all of which you furnished, are most attractive in appearance and operate satisfactorily.

The promptness you showed in delivering this large order as required, and the efficient way in which you co-operated with the contractors was very much appreciated and meant a great deal in so large a building operation.

Cordially yours,

The New Yorker Hotel,

by Mac Kanner

President.

MORE THAN 12,000 FIXTURES AND FITTINGS . . . ON THE JOB WHEN WANTED, AND AT WORK WITHOUT A HITCH!

THE PROMPT and efficient way that Kohler fills orders, large or small, is strikingly revealed with the completion of The New Yorker . . . rising forty-five stories above ground at Eighth Avenue and 34th Street, New York, and costing $22,500,000. This hotel, the largest in New York, used Kohler fixtures and fittings exclusively, a total of over 12,000 pieces!

In commenting on the thoroughness of Kohler service, extending from the time the order was placed until the actual installation, Mack Kanner, President of The New Yorker Hotel Corporation, writes:

"We selected Kohler plumbing fixtures in the confidence that your enameled and vitreous plumbing fixtures, and chromium-plated brass fittings, were of the highest quality.

"The promptness you showed in delivering this large order as required, and the efficient way in which you co-operated with the contractors, meant a great deal in so large a building operation."

The contracting firm, W. G. Cornell Co., through the Vice-President, George J. Simons, also expresses gratification:

"Now that The New Yorker Hotel is completed and occupied, the writer feels that W. G. Cornell Co., as the plumbing contractor on this building, owes your company a word of appreciation for the splendid co-operation shown, the efficient service, and the prompt delivery rendered by you. . . . The owners and builders have also expressed themselves to us as well pleased with your plumbing fixtures, as well as with the plumbing system in general."

Kohler organization, coupled with unusual resources which insure ample stocks at all times, makes it possible for this house to deliver orders of any nature when and where you want them, without difficulties. Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis.—*Branches in principal cities*. . . . Look for the Kohler trade-mark on each fixture and fitting.

KOHLER OF KOHLER

PLUMBING FIXTURES

The world's largest producer of Rubber offers this quality line to you through selected supply houses

Here is a complete line of quality rubber products scientifically designed and made by the world's largest producer of rubber.

The line is exclusively yours. The handy man cannot buy or install it. "U. S." Royal Maroon products, due to their quality protect you from complaints and insure satisfied customers.

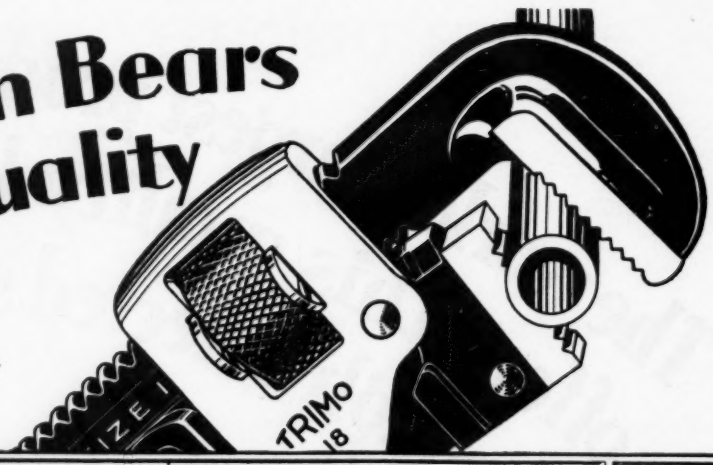
See your jobber today and ask for the "U. S." Royal Maroon Catalog or write us direct.

United States Rubber Company

Executive Offices:
1790 BROADWAY, NEW YORK CITY

"U.S." ROYAL MAROON LINE
of Plumbers' Rubber Specialties

A Tool Which Bears Out Your Quality Theory



AS a plumber or steamfitter you have probably justified your choice of a particular brand of tool on the grounds that it "had the quality in it." You were simply advancing the theory that quality tools were the safest tools to buy.

The quality theory has been putting TRIMO wrenches in the kits of plumbers and steamfitters for over forty years. Today the TRIMO pipe wrench is more of a quality tool than ever—stronger, longer lasting, more ably made. The jaws and handle are drop forged steel —not castings.

The steady demand that is keeping all steel TRIMO way up in the quality class proves that your quality theory is more than a theory after all—it's a fact!

At your jobber's or supply house

TRIMO Pipe Wrench

All Steel for Strength — TRIMO — *Replaceable Jaws for Lifetime Wear*

Made by **Trimont Mfg. Co., Inc.,** Roxbury (Boston), Mass.

COLUMBIA

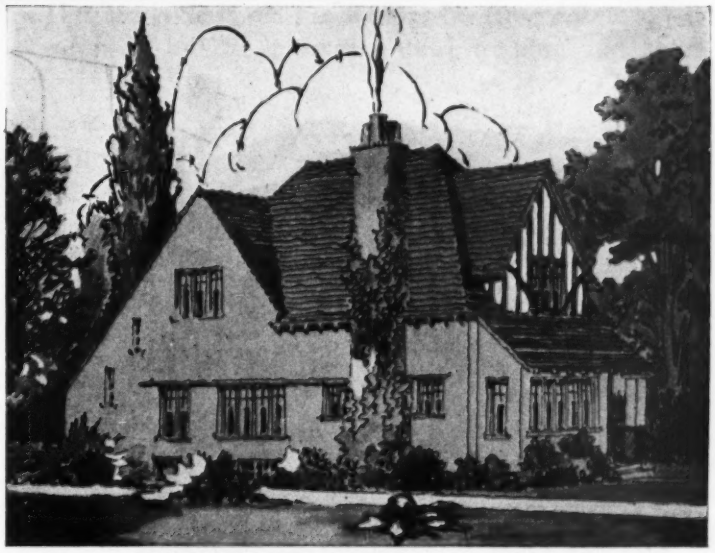
JACKETED BOILER

All interior parts accessible

Draft door on side of boiler

Erection of boiler and jacket very simple

Black enameled doors



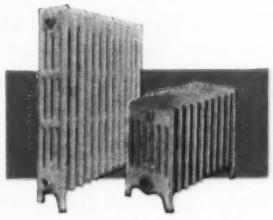
. . . *and* McKeesport Radiation

THE finest homes in your community are ideal prospects for COLUMBIA Boilers and McKEESPORT Radiation — two items that spell profit for progressive heating contractors.

COLUMBIA RADIATOR CO.

McKeesport, Pa.

The McKeesport radiator line is complete, offering you a size and capacity for every building need!



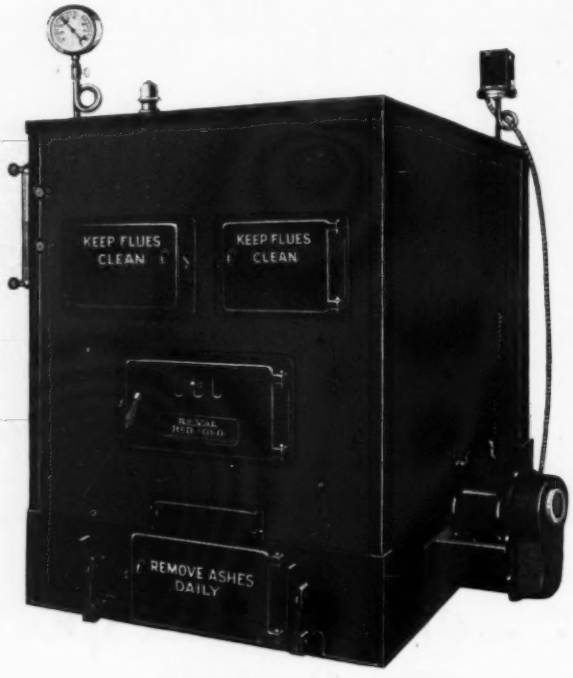
PITTSBURGH
Office and Warehouse
McKeesport, Pa.
Phone,
McKeesport 4175

HARRISON, N. J.
Office and Warehouse
119 Bergen St.
Phone, Harrison 2980

NEW YORK OFFICE
Room 705
7 East 42nd St.
Phone,
Murray Hill 9847

PHILADELPHIA
Office and Warehouse
American and York Sts.
Phone, Nebraska 7543

RED BLAST



Boiler and Blower

Complete

In One Unit

THE latest contribution to up-to-the-minute heating practice combines the ROYAL Red-Blast Boiler with blower in one complete unit. No expensive special grates, wiring, or other accessories to install as an afterthought. The small and low-price size of coal is the natural fuel for this modern boiler. Grates designed to handle any size, down to and including Number One Buckwheat.

This is a real merchandising opportunity, entirely outside of "just another boiler" competition, especially in view of its surprisingly low cost. Units range in capacity from 300 to 2500 square feet of equivalent steam radiation. Write or call any of the branch offices listed below for complete information.

HART & CROUSE CO.

UTICA, N. Y.

BRANCH OFFICES:

Boston	Huntington Ave. Freight Yards
Chicago	1446 So. Canal St.
Cleveland	3471 E. 49th St.
Detroit	459 York St.
Harrisburg, Pa.	133 15th St., New Cumberland, Pa.
Long Island City	Manley St. and Anable Ave.
New York	5037 Grand Central Terminal Bldg.
Philadelphia	2019 Rittenhouse St.
Pittsburgh	1945 Oliver Bldg.
Utica, N. Y.	301 Turner St.
Washington, D. C.	4th and Channing Sts. N. E.
Thomas Robertson & Co. Ltd	262 Craig St. West, Montreal

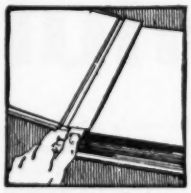
THE HANDY SPEEDLOK
Domestic Engineering Catalog Binder

Especially designed for the standardized catalog page adopted by the plumbing and heating industries

The SPEEDLOK is a quick operating catalog binder designed to fit reprints of catalog pages in "Domestic Engineering Plumbing and Heating Catalog" as well as all other catalog pages that conform to the standards adopted by the plumbing and heating industries.

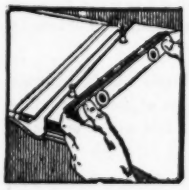
Easy and speedy operation are special features of this binder. A slight pull on the concealed bar under the top cover unlocks mechanism when sheets are inserted. Equipped with bar for removing sheets when changes are made.

Minimum capacity 1¼ inches. By simply unscrewing extension posts capacity can be extended to 2¼ inches. Works perfectly for all requirements—either a few sheets or filled to capacity.



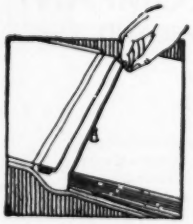
Covers are bound in heavy black Levant Grained Fabricoid, semi-flexible, very durable and attractive looking.

To unlock Binder—Pull out slide bar in top wing. Top cover will immediately fall back.



To lock Binder—bring top wing back over the posts—be sure posts fit in the holes in the top wing—then push in slide bar.

Separate the sheets where desired and slip sheets off the posts. Take out sheets or put in new ones as desired. These three moves take but a few seconds. Each operation is a natural one.



To increase or to decrease the capacity of the binder is a simple operation. The two posts are so constructed that they can be easily raised or lowered to meet the height requirements. Binder posts can be extended from 1¼ inches to 2¼ inches.

Price of binder—$3.00. Prices on quantities on application.

For Plumbing and Heating Contractors—

Many master plumbers and steamfitters assemble working catalogs from standardized catalog sheets filed in binders.

Domestic Engineering is in position to furnish without charge, upon request, loose sheets—which are reprints from catalog pages appearing in "Domestic Engineering Plumbing and Heating Catalog"— of several hundred manufacturers. They are standard catalog page size — 10⅝ x 8½ inches — are printed on a good grade of light paper and punched according to the standard adopted by the plumbing and heating industries. These sheets fit the SPEEDLOK binder.

For Jobbers' Salesmen—

The loose-leaf system reduces to the minimum the bulk and weight of catalog material required by the salesman. Only matter actually required for selling purposes need be carried in the binder. It does away with the necessity of carrying entire catalogs, booklets and circulars of various sizes and shapes.

Salesmen using the loose-leaf system have a great advantage over men not using this equipment—to say nothing of the added convenience, time and labor-saving features.

With a modernly equipped loose-leaf binder, the salesman can present his products in a more comprehensive manner than it is possible to accomplish by the old methods. Having all his material up to date in compact form and easily available, he can show latest specifications, answer questions or quote prices more readily.

When orders for binders are accompanied by requests for catalog reprints the binders will be equipped with the sheets desired and shipped complete.

Write for full details regarding loose sheets and binders.

DOMESTIC ENGINEERING

1900 Prairie Avenue *(Catalog Department)* **Chicago, Illinois**

JOSAM DRAIN JOSAM JOSAM JOSAM JOSAM JOSAM

In the Modern Hospital

UPPER ILLUSTRATION
De Paul Hospital, St. Louis.
Architect, O'Meara & Hills.
Plumbing Contractor,
McNamara Plumbing Co.,
all of St. Louis

LOWER ILLUSTRATION
Evangelical Deaconess Hospital, St. Louis.
Architect, I. P. Barnett.
Plumbing Contractor,
J. A. McBride Co.,
all of St. Louis

Where the world achieves its standards of sanitation, the drain manufacturer is called upon for the utmost in engineering skill. Unusual requirements that guard against contamination to a degree seldom appreciated by the layman are a hard and fast rule of medical institutions. These needs become amplified when applied to the one location in each instance that must carry away hospital drainage. The refuse in waste water would quickly damage a plumbing system and this dual duty of drain and interception offers unlimited solutions for the drain manufacturer.

All drains and interceptors installed throughout in the two St. Louis hospitals shown above are Josam. From the list below it will be noted that every type of drain and interceptor is included in the Josam line. Catalog G shows this complete line and offers many practical suggestions.

Member Plumbing and Heating Industries Bureau

Josam TRADE MARK PRODUCTS STANDARD OF AMERICA

JOSAM MANUFACTURING COMPANY
4904 Euclid Building CLEVELAND, OHIO

FACTORY: MICHIGAN CITY, INDIANA
BRANCHES IN ALL PRINCIPAL CITIES

The Josam Line includes: Josam Drains for Floors, Roofs, Showers, Urinals, Garages, and Hospitals; Josam Swimming Pool Equipment; Josam-Marsh Grease, Plaster, Dental and Surgical, Sediment and Hair Interceptors; Josam-Graver Floor-Fed, Gas-Fired Garbage and Rubbish Incinerators; Josam-Open Seat Back Water Sewer Valves; Josam Open Seat Swing Check Valves; Josam Adjustable Closet Outlet Connections and Bends, Water and Gas-Tight.

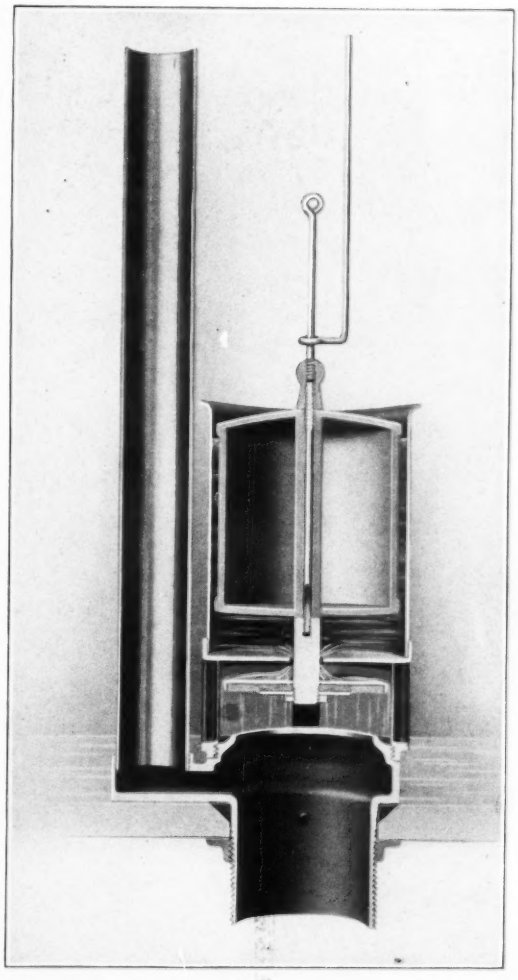
JOSAM PRODUCTS ARE SOLD BY ALL PLUMBING AND HEATING SUPPLY JOBBERS

THERE ARE NO SUBSTITUTES FOR JOSAM PRODUCTS

QUIET and ENDURING

EFFICIENCY

It requires but one inspection to realize the efficient, never-failing operation of the Curtin Victory Valve. It is sure, foolproof. It takes all the water from the tank at each flushing. Curtin Victory Valve is built to give the utmost in quiet, durable service.



CURTIN

TANK NOISELESS FITTINGS

A.F. CURTIN VALVE CO., MEDFORD, MASS.

IS YOUR HEAD FULL

OF FLUSH VALVE WORRIES

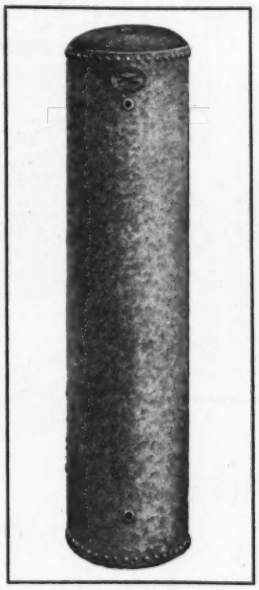
You cannot afford "flush valve headaches." They are too costly to your business and reputation. And they are unnecessary! Smith & Wesson Flush Valves solve once and for all the old problems of—installation—service and dependability.

Because of their advanced design and balanced performance, they reduce this part of the job to an assured certainty.

INVESTIGATE! ASK YOUR JOBBER.

SMITH & WESSON
FLUSH VALVE DIVISION
SPRINGFIELD MASS.

SMITH AND WESSON FLUSH VALVES



Range Boilers—in All Types and Capacities

TRADE MARK
L.O.K. & BRO. INC.

Certified!

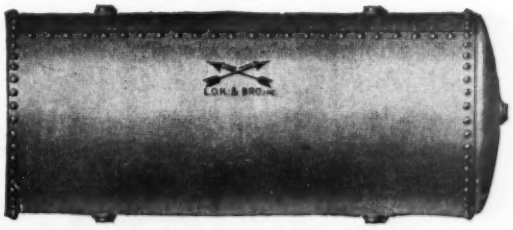
Like a certified check, the KOVEN trade mark is your guarantee of *known* quality, *good* workmanship, and *correct* design.

More than 49 years' close contact with the trade, has established a reputation second to none for absolute dependability and *prompt, efficient service!*

Special Attention Given to Products Ordered to Specification.

L. O. KOVEN & BRO., Inc.
154 Ogden Ave. Jersey City, N. J.

Scullery Sinks—in Standard Sizes, and to Specification

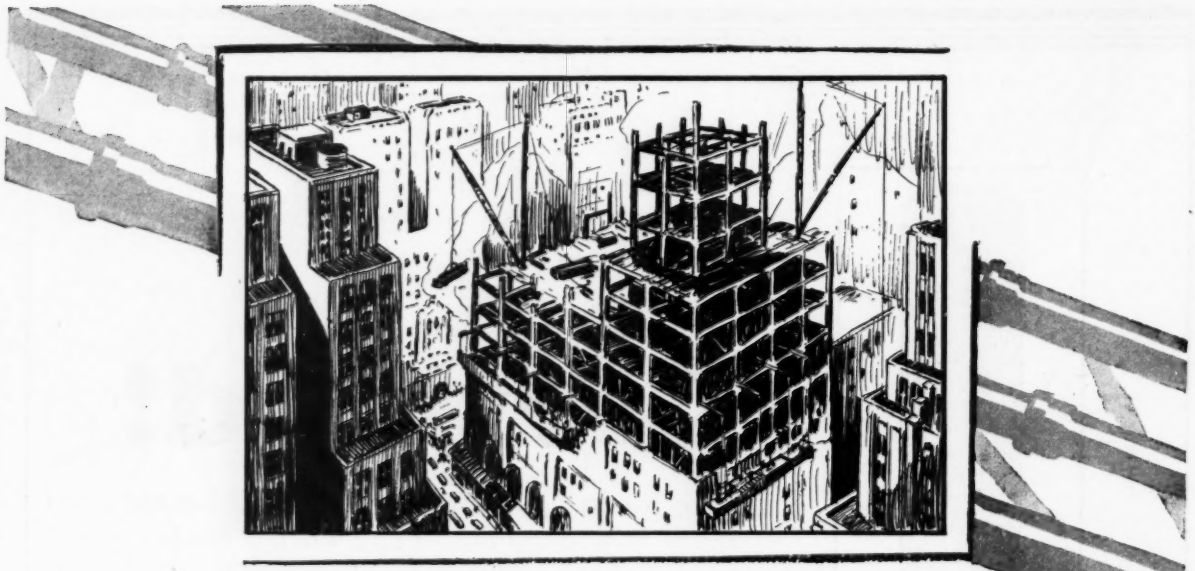


Storage Tanks

Koven Products

Range Boilers
Barber Boilers
Fuel Oil Tanks
Scullery Sinks
Pneumatic Tanks
Expansion Tanks
Septic Tanks
Storage Tanks

Descriptive Literature on any or all KOVEN products mailed on request



Take a tip from the architects

What do they do NOWADAYS in specifying the soil pipe from a photostat room, a battery room, a laboratory? They call for Duriron.

What do you do when called in to replace a cast iron drain line of similar service that's "gone out"? Do you tell your customer to put in Duriron? You'll serve both your customer and yourself by doing so.

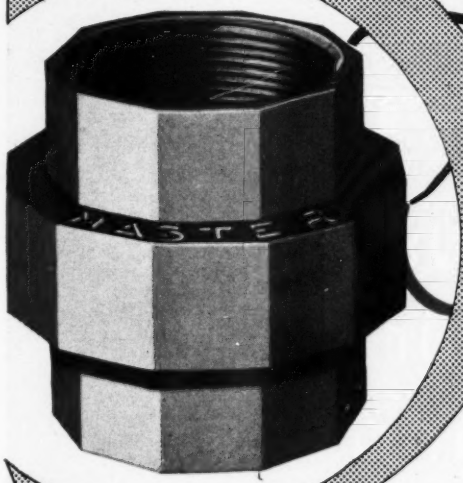
THE DURIRON COMPANY, Inc.
Dayton, Ohio

Sales offices in 29 principal cities

DURIRON ACID PROOF DRAIN-PIPE

D-62

THE MASTER



The New Commercial Standard Union

The Lowest Market Price Makes It Attractive

The new Commercial Standard Union designed to conform to the U. S. Department of Commerce, Bureau of Standards—Specification CS7-29 and accepted by the different trade associations, manufacturers, and U. S. Government.

The new Commercial Standard Union, effective from May 1st, 1930, provides for a Union suited for general use. It is a 250 lb. standard weight Union recommended for use on standard weight pipe.

The Master is made of air refined, malleable iron with a ground ball brass to iron joint and is strictly a quality product, the result of high-grade materials, careful workmanship, and a rigid inspection.

FOR SALE BY ALL LEADING JOBBERS

New York Pipe Fittings Corp.

50 Church St.
HUDSON TERMINAL BUILDING
NEW YORK

STASCO

Four Aces in Your Selling Hand . . . . . .

PLUMBERS selling the "STASCO" Seamless Seat line are given every advantage in increasing their sales and profits.

1. A Quality Product—Every "STASCO" Seat is guaranteed, yet not one has ever been returned because the finish broke down.

2. Popular Prices — "STASCO" Seats are priced within the reach of everyone in the plumber's sales territory.

3. Advertising Helps — Window displays, direct-mail folders and counter displays are furnished free to every "STASCO" dealer.

4. Sales Helps — Specially prepared sales suggestions and selling helps for your entire business are to be found in the "STASCO" booklet, "The Way to Greater Profits."

If you are not already handling this profitable, fast-selling line, write us today for further information.

• •

"STASCO" Seamless Seats are made in white and an attractive range of modern colors. The complete "STASCO" line includes sheet Pyralin seats in white and marine pearl and an attractive selection of hard rubber seats.

"STASCO" No. 196
Empire White
Retail Price, $7.50
All white even to the hinges, this seat, like all "STASCO" Empire White Seamless Seats, is fully guaranteed.

"STASCO" No. 358
Empire White —
Retail Price, $5.50
In Colors —
Retail Price, $7.50
A serviceable, popular-priced Seamless seat, guaranteed not to crack, chip, craze, peel or discolor.

STANDARD TANK AND SEAT COMPANY
CAMDEN · · NEW JERSEY

3 PROFITS!

TO EVERY MERION

Profit No. 1 The Merion Heater sells at a price not only unusually attractive to your customers but also to you. It is low enough to make turnovers quick and profits bigger.

Profit No. 2 You profit from the sale of Merion Heaters because your customers immediately become boosters. Merion Heaters give them the kind of service they want and they are glad to talk about it.

Profit No. 3 Merion Heater sales always lead to the sale of other equipment. Once a home has an abundant supply of hot water at all times, at a very low cost, there are many companion accessories needed.

Profit three ways with Merion.
Write today for full details.

MERION
AUTOMATIC WATER HEATERS

JOHN WOOD MFG. COMPANY
CONSHOHOCKEN PENNSYLVANIA

Do You Buy Conversation?

IN THE days when "Conversation Circulation" statements were the basis on which the advertiser bought space, the advertising solicitor who put up his story in the most pleasing manner generally got the business.

In rare cases of doubt, the prudent advertiser of former days would go to the publisher's office and look over the circulation records with his own auditors. But neither he nor his auditors knew the intricacies of circulation records or the possibilities for juggling figures.

Circulation differences and arguments caused bitter battles between publishers. Ingenious schemes were used (in a few cases they are still being used) by unscrupulous publishers to put up the appearance of a larger circulation than they had.

These practices brought out the necessity for a reputable agency to audit and report on circulation matters and it was to meet this demand that the Audit Bureau of Circulations was started thirteen years ago by a nucleus of the leading advertisers, advertisers' agents, and publishers.

The purpose of the Bureau is to make fair and impartial audits of circulation records and its reports are now accepted as the Standard Authority among advertising buyers throughout the United States and Canada.

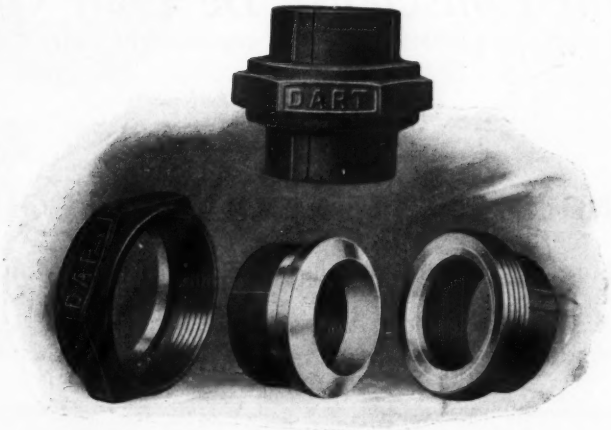
Every Publisher-Member of the Bureau is required to make semi-annual statements setting forth the actual NET PAID circulation. The Bureau sends an auditor to the office of each publisher to check his circulation statements.

Study the A. B. C. reports of the publications you are considering and it will not be necessary to argue about competitive circulation. If a publisher cannot give an A. B. C. statement, it may be because he cannot meet the requirements of the high circulation standards set by the A. B. C.

DOMESTIC ENGINEERING is a member of the A. B. C. and would be pleased to submit a copy of its latest circulation report.

DOMESTIC ENGINEERING · 1900 Prairie Ave. · CHICAGO

TAKE ONE APART



For every dollar you and your customers spend for unions you are entitled to DART quality. DART quality means—double wear—double saving—and double efficiency.

Take a DART UNION apart. Look at the TWO BRONZE SEATS that are protection against corrosion and leaks. Notice how easily the ball ground joint will make-up tight.

Sample Union for test furnished on request.

GET DARTS
THEY'RE
BETTER.

E. M. DART MFG. CO.
PROVIDENCE, R. I.
The Fairbanks Company—Sales Agents
Canadian Factory: Dart Union Co., Ltd., Toronto, Canada

DART UNIONS

"Let Your Conscience Be Your Guide"

An excellent motto to follow in the conduct of your daily life

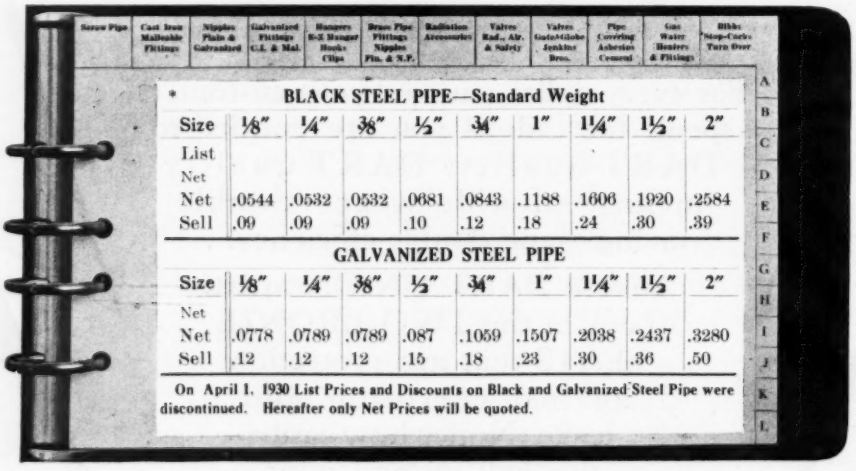
In material things

Let the Bradford Price Book Be Your Guide

For instance! *In ascertaining the Net Cost of your Material*

In Checking and Pricing your Invoices

For information in Billing Merchandise to your Customer



Screw Pipe | Cast Iron Malleable Fittings | Nipples Plain & Galvanized | Galvanized Fittings C.I. & Mal. | Hangers S-S Hanger Hooks Clips | Brass Pipe Fittings Nipples Fin. & N.P. | Radiation Accessories | Valves Rad., Alr. & Safety | Valves Gate-Globe Jenkins Bros. | Pipe Covering Asbestos Cement | Gas Water Heaters & Fittings | Bibbs Stop-Cocks Turn Over

* BLACK STEEL PIPE—Standard Weight

Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
List									
Net									
Net	.0544	.0532	.0532	.0681	.0843	.1188	.1606	.1920	.2584
Sell	.09	.09	.09	.10	.12	.18	.24	.30	.39

GALVANIZED STEEL PIPE

Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Net									
Net	.0778	.0789	.0789	.087	.1059	.1507	.2038	.2437	.3280
Sell	.12	.12	.12	.15	.18	.23	.30	.36	.50

On April 1, 1930 List Prices and Discounts on Black and Galvanized Steel Pipe were discontinued. Hereafter only Net Prices will be quoted.

A B C D E F G H I J K L

*The above is a reduced facsimile of a Bradford Price Book page, the prices, though, have been advanced for publicity purposes.

A glance at the above cut shows how the

BRADFORD PRICE BOOK

will do all these things for you.

THE BRADFORD PRICE BOOK IS A LOOSE LEAF SERVICE, BASED ON AND IN ACCORD WITH CHANGING MARKET CONDITIONS.

Specimen sheets and information will be sent upon request.

Write for full particulars to **The Bradford Price Book** 11 MAPLE STREET QUINCY, MASS.

P. S. The subscription price to the book includes a year's revision service without extra charge. Last year we revised approximately 700 pages.

300% MORE CUTS

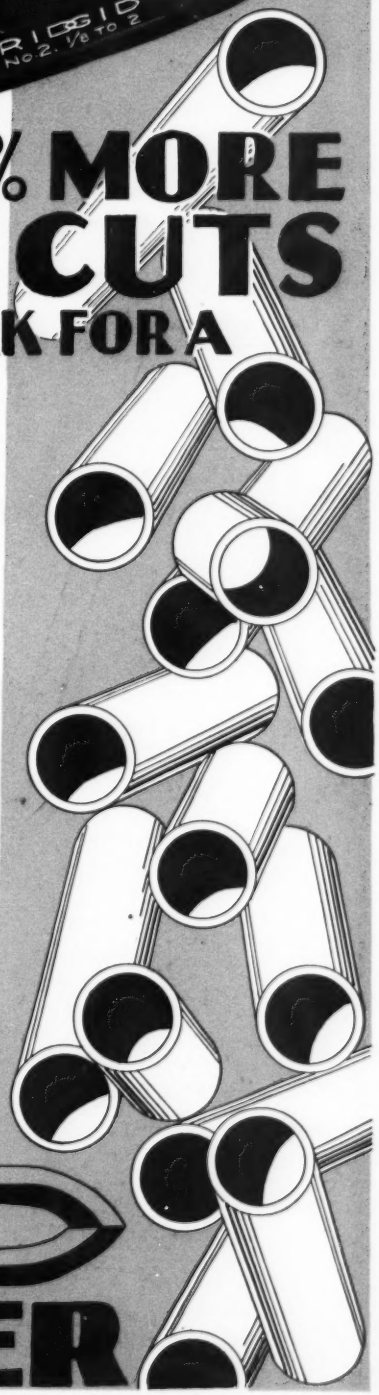
-ALL IN THE DAY'S WORK FOR A RIGID BLUE CUTTER BLADE

ANOTHER big advance in pipe cutters—the new super-steel "Blue Ridge" Blade, a typical RIGID improvement. It actually makes three times as many cuts, does a much cleaner burr-free job and reduces your costs tremendously. The hardness and keenness of this new blade enable it to knock out literally hundreds of tough cuts—then, for all the world like a safety razor, a new blade goes in in a jiffy.

This new blade is built for super-service and its performance will surprise you. Truly, a development in the plumber's equipment that enables him to do better and faster work. Your jobber will show you the new RIGID Cutter and the new "Blue Ridge" Blade, instantly identified by the color and trademark.

And there are other unusual RIGID pipe tools you should get acquainted with: the famous RIGID Wrench with guaranteed housing; RIGID Vises with no-mar jaws; and RIGID Super-Six with compound leverage for big pipe.

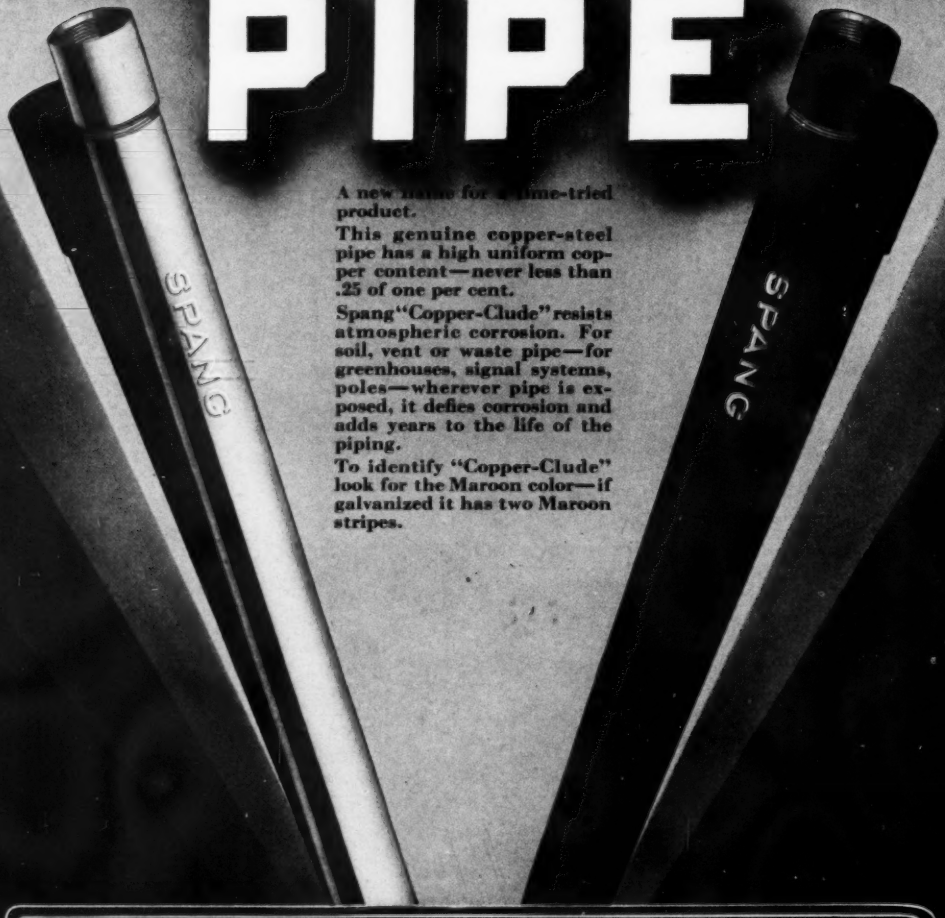
THE RIDGE TOOL CO. Dept. D, Elyria, Ohio



RIGID PIPE CUTTER

SPANG
WELDED STEEL PIPE

SPANG
Copper-Clude
PIPE



A new name for a time-tried product.

This genuine copper-steel pipe has a high uniform copper content—never less than .25 of one per cent.

Spang "Copper-Clude" resists atmospheric corrosion. For soil, vent or waste pipe—for greenhouses, signal systems, poles—wherever pipe is exposed, it defies corrosion and adds years to the life of the piping.

To identify "Copper-Clude" look for the Maroon color—if galvanized it has two Maroon stripes.

SPANG, CHALFANT & CO., INC.

General Offices: CLARK BUILDING, PITTSBURGH, PA.

Sales Offices: NEW YORK BOSTON PITTSBURGH CHICAGO ST. LOUIS TULSA LOS ANGELES DALLAS BIRMINGHAM

Welded Mills: ETNA, PA.—SHARPSBURG, PA. *Seamless Mills:* AMBRIDGE, PA.

SPANG
WELDED STEEL PIPE

We present to you our New Catalog

All that is modern—all that is good and simple and practical—all that you would want to see in an ideal Vacuum or Vapor Heating System—you will find described in this catalog, just published, of

SARCO
Heating Specialties

As pioneers in the introduction of thermostatic devices, Sarco offers to the Heating Industry a complete line of specialties which, in combination, form Heating Systems of utmost simplicity, high efficiency and trouble-free durability.

If you are interested in finding ways to keep costs low without sacrificing quality or durability, but by eliminating needless complication, write for your copy today.

Ask for Catalog M-40. No obligation, of course.

SARCO COMPANY, INC.
183 Madison Ave. New York, N. Y.
Branches in all Principal Cities
Sarco (Canada) Limited, 660 St. Catherine St., W., Montreal

SARCO RADIATOR TRAP
BUILT TO A QUALITY STANDARD

IF IT'S WORTH THREADING—

IT'S WORTH A "TOLEDO"

A job to be well done must have the proper tools. There are no better tools known for threading pipe than "TOLEDOS." Time has proven their superiority.

"TOLEDO" offers a very complete line of pipe threaders, pipe cutters, small power pipe machines, work benches and other kindred articles. From the many fine pipe tools included in the complete "TOLEDO" line, you will find there is one particularly suited for every job, no matter how large or small it may be.

Thousands of contractors are depending on "TOLEDOS" for their piping jobs. A confidence placed in "TOLEDOS" because of their rugged construction, durability, precision in manufacture and their ability to produce perfect standard threads year after year.

You, too, can depend on "TOLEDOS." Familiarize yourself with the complete "TOLEDO" line. Write for catalog.

"TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio

New York Office: 72 Lafayette St.

DOMESTIC ENGINEERING

PLUMBING AND HEATING CONTRACTING AND MERCHANDISING

Observations

Why They Are Big

At one of the state conventions this year an interesting blueprint headed, "A Chart of Fixed Charges or Operating Costs" was distributed. It showed the operating costs for a number of plumbing and heating establishments with an annual volume ranging from $7,500 to $250,000. A close analysis of the figures leads to several interesting conclusions. They have the added value that each of these establishments, from the highest to the lowest, is paying its proprietor or proprietors a profit. So that there is no need to make critical comparisons.

What we want to take notice of, is that there is an almost arithmetical progression downward in the costs and upward in the profits as the size of the business grows. And the important point about this fact is, that this is not the result of the growth in volume, but largely the cause.

Capital Requirements

For example, take the matter of capital. Very many small businesses remain small because the capital investment is never increased. High costs, poor estimating, failure to take discounts, poor credit extension and consequent losses, make it impossible for too many men in business in a small way ever to "plow back" a part of what they ought to be earning. This is the only way a business can grow.

If a man has, say, five hundred dollars invested in his business, and manages to do six or seven thousand dollars in volume on that capital, that is about the limit. Often it is when he tries to stretch beyond that limit that he meets with disaster. What happens? A job which involves in itself perhaps half of what his annual volume has been, is offered him. He has not the capital to finance the job himself. He is forced to borrow it in one form or another. Usually he does so in the form of the materials for the job. And that is the beginning of a period of discouragement for him. He is in over his head and never seems to be able to catch up with his account with his sources of supply. His whole capital is tied up, he can not take discounts, and it is only human that he becomes anxious to take any and every job offered him, hoping that each one will help to pull him out of the hole.

Thus, as the volume of business shown in the chart mounted, the capital invested mounted. But it did not mount in direct ratio to the increase in the amount of business done. The business doing $7,500 a year was operating on $750 of the owner's own capital and $425 of borrowed capital. The business doing $250,000 a year was operating on $15,000 of the owner's capital and $6,000 of borrowed capital. In other words, it took 15. 7 per cent capital to do $7,500 worth of business, while it took only 8.4 per cent to do $250,000 worth.

The explanation is made plain by the figures. The larger the business, the larger the advertising appropriation. The larger the business the smaller the percentage of overhead becomes. It ranges from 49.7 per cent for the smallest business to 15.8 per cent for the largest, when figured on the cost of labor and materials; and from 30.2 per cent to 12.4 per cent when figured on the sale price.

There are other figures which suggest that along with the larger type of business there goes on a larger type of thinking. More money is spent for dues in civic organizations, which means that these men who are at the head of businesses doing around a quarter-million a year are in closer contact with what is going on in their communities and are in touch with the men under whose leadership various projects are carried through.

Big Caliber Thinking

And last, though by no means least, it is plain that the business paper is more sought after in these larger firms. They want to be posted on what is happening within the industry and to do that, they must have the business paper, as they must have the newspaper for general information. The sums spent for the service offered by the business paper show the same kind of an increase as that which is spent for advertising, etc.

As said above—these are causes, not results, of growth. It is the well posted man who knows where to cut down his overhead, who knows how to advertise and how to spend money in order to get business, and who knows that a growing business needs a growing capital—it is that man who climbs from the $7,500 class to the quarter-million group.

A Job of Sales Management

The position of that wholesaler is secure who recognizes that under modern conditions he has a job of sales management on his hands. As long ago as 1927, the National Wholesale conference pointed out that the wholesaler's function purely as a warehouseman—purely as one who assembled manufactured goods and passed them on to the retailer—included an obligation to speed up the distribution of merchandise by applying sales effort.

The statement that the wholesaler has a job of sales management on his hands may seem elementary, yet it is true that it is a fact not yet completely realized in practice by many wholesalers.

At the meeting of the pipe and supplies group at Pinehurst, there were a number of instances cited to show that, in practice, the wholesaler has some way to go before he is completely filling his function under modern conditions.

One of the speakers referred to a wholesaler who was having trouble with the amount of returned goods he had to handle. These returns were analyzed and it was found that about fifty per cent of them were coming back from the customers of one salesman. Comparisons made with another salesman, calling on the same type of trade, showed that this second salesman had but few cases of returned merchandise. The analysis and comparison resulted in a check on the sales methods of the first salesman. It turned up the fact that as a closing argument, this salesman was telling his customers that they could send the goods back. Naturally, some effort was expended on helping him to improve his sales methods, with the result that there has been a marked reduction in merchandise returned by his customers.

One Type of Problem

The other case, cited by an economist who is to make a study of wholesaling in our field, was this: A group of wholesalers, in another field, analyzed their sales. They discovered that they were getting 90 per cent of their business from 42 per cent of their customers; 80 per cent from 26 per cent of their customers. In still another field, a group of wholesalers were getting only 10 per cent of their business from 44.3 per cent of their customers.

Here are two distinct types of problems—but each of them coming under the head of sales management. In the first case we have the problem of training the individual salesman. How many wholesalers have anything like a training course for the men calling on the trade? How many wholesalers know just what methods are used by the men representing them in the trade?

Those companies which have scored the greatest success in selling have given careful attention to the training of salesmen. To some degree, every firm which has salesmen ought to carry out training similar to that which has made National Cash Register, Fuller Brush, and other companies noted for efficient sales methods, stand out.

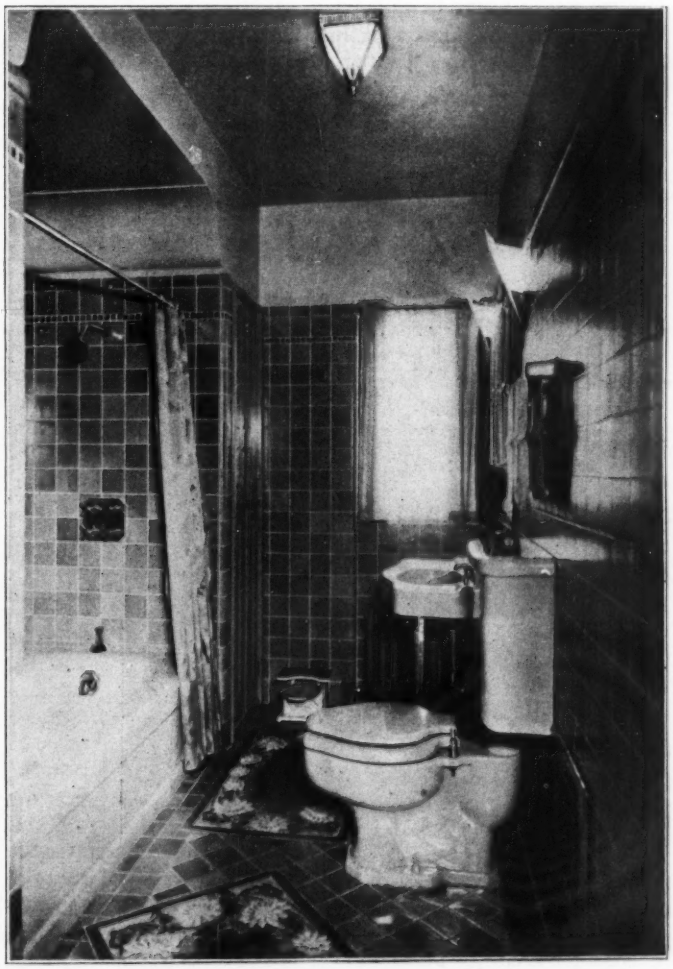
The other problem is one of general sales management. It involves an intelligent study of results, so that costs and distribution of sales may be seen in their true relations. Take the group of wholesalers getting only 10 per cent of their business from 44.3 per cent of their customers. The sales expense involved in calling on almost half of the customers of these wholesalers resulted in one-tenth of the total sales volume secured. It is as a result of such studies that the government can report wholesalers who have cut down their customer contacts by as much as one-third, with a substantial increase in net profit.

Another Problem

Efficient handling of salesmen, therefore, and a growing ability to analyze costs (coming, some day, perhaps, to the ideal of the Central Supply Association, by which sales costs on individual items would be available) become the special tasks of those who must direct the activities of wholesale salesmen in our own, as in other fields.

Color!

A study of the use of color by a woman familiar with the industry; and practical suggestions for the interested plumbing contractor



Fixtures in this bathroom are all in green. All of the fittings are chromium-plated. Floor and walls are in green tile and the ceiling also is green. Rugs are green and cream, shower curtain has blue and cream sunburst design effects

DURING the past year or two, color has entered into and become the vogue in bathroom and kitchen equipment to such an extent that plumbers of today must have some knowledge, no matter how little, of color harmony and interior decoration that they may be in a position to assist customers in equipping and modernizing these two all important rooms. At first, it seems apparent that this is a difficult undertaking, but patience, combined with thoughtful application, successfully brings desired results.

You will find that when your customers wish to introduce color into these rooms, a suggestion from them as to choice or preference of color would be of great assistance. There may be some favorite color they have in mind but feel timid or uncertain as to the harmonizing tones which will render a pleasing and satisfactory tonal effect.

It would be well to understand that contrasting colors in fixtures and walls are more desirable—easier to tone in with rather than to match color for color, this being almost impossible due to the various materials and textures employed in making up interiors. While you may feel that a customer's choice of color or color combinations is crude or might result in dissatisfaction later on, it is at all times advisable to follow out as far as possible their ideas, with, of course, the proper suggestions as to changes or improvements.

Customers Need Guidance

You will frequently find that customers are without definite ideas or even helpful suggestions. They merely know that they desire something new and would be quite well satisfied to follow out any plan or suggestion which you might submit to them. If the plumber should find this a little beyond him, there are many ways in which he can secure the needed help. Occasionally there are times when his office assistant would welcome such an opportunity.

May we here illustrate, for your benefit, several

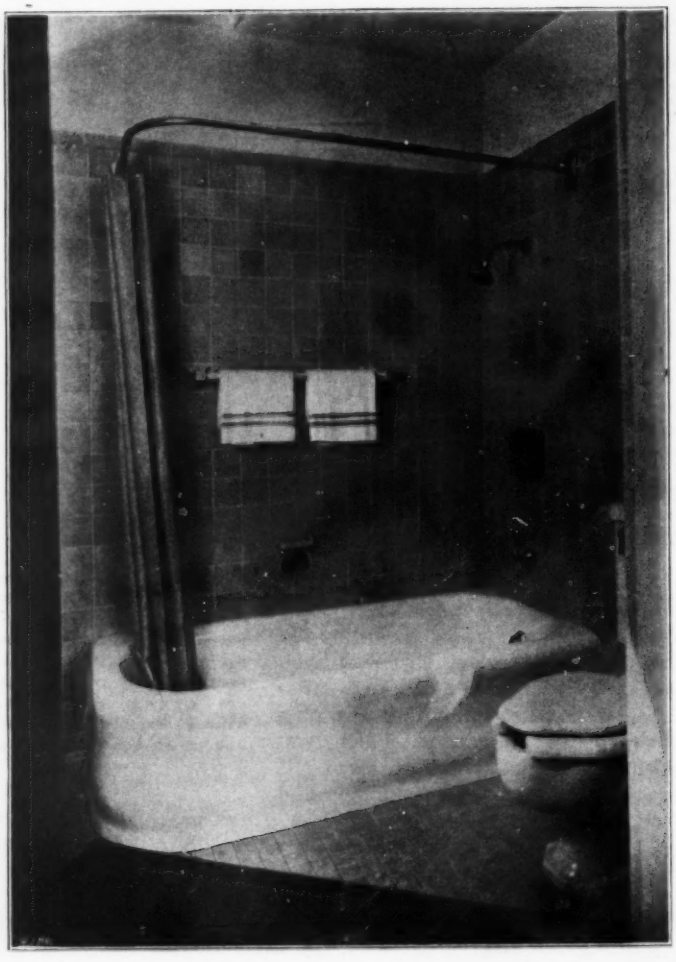
color plans that may serve or assist you under similar circumstances, or prove a guide in assembling color arrangements of your own?

A customer who had given much thought to the remodeling of her kitchen, called on her plumber for assistance in the choice of color, and her chief thought was "something different." Many of her friends had redecorated their kitchens. She considered them "pretty," but so much alike, and, therefore, insisted that this must be something different, attractive, unusual. We are all aware that nothing so pleases as to be just one step in advance of others.

To resume—the lady explained that her kitchen had always lacked the cheer she desired, and since she spent the greater portion of her day there, preparing for her family, her recompense was solely to be had from attractive and cheerful surroundings. Having this in mind, several color "ensembles" were brought up for consideration and the lady herself was appealed to for her own opinion and thought in the matter. She then stated that she had always been somewhat partial to colors bordering on the tan and ivory tints and that yellow had particularly associated itself with sunlight. Ivory—tan—yellow! A perfect wealth of color to work with.

Further conversation brought out other ideas and suggestions, from the lady herself, which later gave her much satisfaction, since she was obtaining what she wanted.

It was then decided that the walls and floors were to be of tile. The next step was to secure samples of tile, which a reliable tile-man was very glad to furnish in the shades above mentioned, together with a bit of contrast in the way of moulding to offset too much solid color, so that the final scheme for walls was a buff color tile of medium shade with a one and one-half-inch moulding, of conventional pattern carrying shades of buff, delft blue, black, and a soft shade of grey-green. At a glance one could see how well they would look together—just sufficient contrast. The floor was to be of buff and black tiles, with black the predominating color.



The floor and walls are of light blue tile and the ceiling is white. The rug is blue with a black border. The shower curtain is blue and towels are white with blue borders. An interesting feature of this bathroom is the fact that the soap holder and other china accessories are blue, matching the walls, instead of white to match the fixtures

Kitchen Sink Color

Next to consider was the new sink. At first the customer decided on ivory, but after due consideration it was thought too close a tone to the wall and floor surfaces—insufficient contrast. Just what was to be done? Casting about for further suggestion, the colors in the moulding attracted attention and offered a solution. It was found possible to secure a sink in the shade of green which matched with the bit of green in the moulding. Further inquiry brought to light the fact that other kitchen equipment might be procured in the same shade of green, and the furniture was redecorated to carry out the color scheme. One can scarcely believe the amazing results.

It might be well to state, for your comparison, that the ivory furnishings might have been used but not with the same effect, whereas the change of color in no way affected the customer other than to add to her enthusiasm.

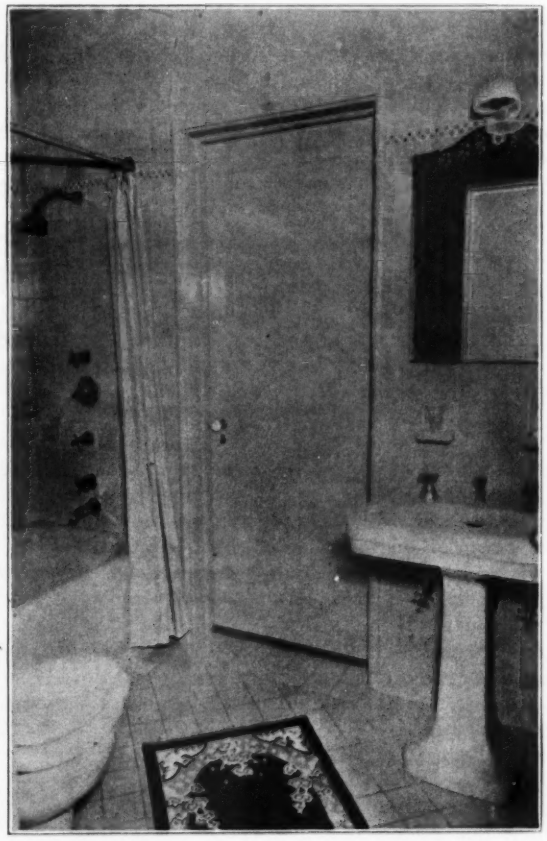
It is true, that this installation resolved itself into considerable expenditure, but it is to be remembered that there are many cases where, while desirous of beauty, the question of any large financial outlay could not be considered. Be assured that satisfactory results may be obtained when such is the case. You will find the following to be equally pleasing with considerable less outlay:—

Walls may be of white tile, sanitas, imitation tile or wall board, with the merest suggestion of color—blue, green, orchid, yellow, etc., as taste dictates, used as a border or trim. The floor may be of black and white mottled or tile pattern linoleum. Sink, gas range and refrigerator, or other kitchen equipment, to be of white with touches of black, and the metal to

be chromium plated. The furniture may be decorated to match the color trim used in the walls, and the window curtains of check patterns, or plain materials of whatever tint has been used as trim on the walls. Could anyone resist so delightful an atmosphere?

Colors for the Bathroom

When it comes to the bathroom, it permits of a more varied range of color, and, here too, the customer's tastes and selections should be deferred to. Should it happen that it is the only bathroom in the house, and made use of by all members of the family, varied tastes must be considered. Frequently in such cases, as in the furnishing or redecorating of the kitchen, the question of expense will be considered.



The plumbing fixtures are in autumn brown. The floor and walls are of brown tile and the ceiling is brown. The rug is black and brown, the shower curtain is light green and the towels are white with colored borders

An inexpensive treatment, of course, could be easily arranged by tiling, sanitas or painting the walls in some soft delicate shade, with the floor in a deeper tone, together with a small amount of some contrasting color. The monotony of the wall may be broken by use of accessories of contrasting color, such as will be used in the floor. Let us consider this color scheme:—

Light green for the walls, with a floor of a little deeper shade, having a fine line of black or French-grey trim. The accessories, such as towel bars, tumbler holders, etc., to be black or French-grey. The ceiling might be painted a very delicate ivory. The bathroom fixtures, such as the bathtub, lavatory and closet outfit, in white with all exposed metal parts chromium plated. For additional color in this type of room, the shower curtain, linens, window drapes and rugs, furnish additional field for display of taste, and such delicate colors as pink, orchid or even yellow, depending on the individual, may be added. You will find the effect quite pleasing.

Another rather striking color arrangement might be worked out as follows:—

Walls of white tile with just a narrow line of black or small design of black, and a floor of black and white tiles—black to predominate. The closet outfit, lavatory and bathtub to be of white with chromium plated trimming. This rather neutral lay-out would permit of a wide range of color and future rearrangement in the way of shower curtain, linens, window drapes and rugs in delicate or more brilliant tones. One woman who preferred vivid colorings added touches of brilliant orange, but for those who desire something more delicate and subtle, there are the soft blues and pinks, orchids and yellows.

We now arrive at the home where each bedroom has its individual bath, and where one is not restricted by the matter of expense, and this, of course, permits a more lavish arrangement. Frequently we find, in cases of this kind, that the occupant decides to carry out his or her favorite color, such as will express individual charm or personality. This, then, furnishes the key for the arrangement and decoration of the private bath.

It may be that the individual is partial to some soft color, a delicate shade of peach, and has a kindly feeling for a dainty shade of blue. This forms a pleasing arrangement for the bedroom. From this evolves the bathroom—and now a revision of color. Here we have blue as the predominating color in the bathtub, lavatory and closet outfit with chromium plated trimming. The baseboard and floor of this room are of a bit deeper shade of blue tile with a little lighter line of it running through the pattern of the floor. The upper portions of the walls are painted a delicate peach with conventional trees in blue scattered over the painted surface. The accessories in this instance look best in metal—chromium plated. Harmony is further obtained by combining both blue and peach in linens, drapes and rugs. This is just a little different and expresses individuality.

An Actual Color Scheme

Another customer who sought to obtain something unique secured a most unusual effect by carrying out the following suggestion:—

The bedroom was decorated in shades of pale yellow with the merest touch of light green. It was decided that the bathroom carry out this arrangement too, and still be of such coloring as would permit a change in the green trim used in the bedroom, substituting some other delicate tint that would harmonize with yellow.

(Continued on Page 187)

How to Figure and Increase Natural Draft

With Emphasis on the Effect of Temperature

By H. T. HALL

Article No. 1

TEMPERATURE is what well may be termed the "motive power" of the chimney. Without the element of temperature there will be little, if any, chimney action, and temperature even has been known to cause a reversal of flow in chimneys. Chimney action is basically so simple and actually so complex that it is difficult to investigate any one of the factors which enter into the production of gas flow in a stack without considering all the others at the same time. However, in this article it will be endeavored to confine the subject to the effect of temperature alone as far as this is practical.

Starting in with the fact that air, when heated, expands and occupies a greater space than it did before the temperature was raised, there is the resulting fact that the weight per cubic foot of the heated air is reduced. For example, if a pound of air at, say, 70 deg. Fahr. occupies a space of 13.34 cu. ft. and it is heated up to 200 deg. Fahr., it then will occupy 16.62 cu. ft., so that while a cubic foot of air at 70 deg. Fahr. will weigh 0.075 lb. at 200 deg. Fahr., it will only weigh 0.060 lb. As higher temperatures are reached this expansion becomes greater and greater while the weight per cubic foot becomes correspondingly less and less as shown in Table 1. At 500 deg. Fahr. the volume occupied by 1 lb. of air reaches 24.18 cu. ft. and the weight per cu. ft. is 0.041 lb.

It may be seen from this that if a cubic foot of air at 70 deg. Fahr. were placed on one side of a balance scale and a cubic foot of 500 deg. Fahr. air were placed on the other side of the scale, as illustrated in Fig. 1, the scale would go down on the side carrying the 70 deg. Fahr. air because the 70 deg. Fahr. air has been shown to weigh 0.075 lb. while the 500 deg. Fahr. air only weighs 0.041 lb. making a difference of

$$0.075 - 0.041 = 0.034 \text{ lb.}$$

Thus, this is a very small difference and would not be of great use unless it can be multiplied in some way so as to give a force which is of sufficient magnitude to be of some value. Now let it be supposed that instead of one cubic foot of air being on each side of the scale that 100 such cu. ft. are used and that the 100 cu. ft. of air are superimposed, one above the other, so as to form a column 12 in. x 12 in. x 100 ft. high as shown in Fig. 2. Whatever difference in weight existed when a single cubic foot was considered will now be 100 times as great since the weight of air on each side of the scale has been increased 100 times. Under this condition the difference is

$$0.075 \times 100 - 0.041 \times 100$$

or

$$7.5 - 4.1$$

or

3.4 lb.

and this may be proved by taking the previous difference for 1 cu. ft. (of 0.034 lb.) and multiplying this difference by 100, thus

$$0.034 \times 100 = 3.4 \text{ lb.}$$

Taking the same 100 cu. ft. of air and arranging the cubic foot blocks flat on the side (see Fig. 3) instead of superimposing them would give the same result as far as difference in weight is concerned, but the area at the bottom of the blocks would be $1 \times 1 \times 100$ or 100 sq. ft., whereas in the instance where the blocks were superimposed the area of the bottom would be only $1 \times 1 = 1$ sq. ft.

In the case where the blocks are superimposed the weight is concentrated on an area of 1 sq. ft. or 144 sq. in., so that there is a difference in weight, or pressure, per sq. in., of

3.4 lb. $\times$ 16 oz./144

54.4 oz./144 = 0.38 oz. per sq. in.

and as water head amounts to 0.57 oz. per inch of height this equals

0.38 oz./0.57 oz. or 0.67 in. of water.

On the other hand with the blocks laid flat and covering 100 sq. ft. of area the figures become

3.4 lb. $\times$ 16 oz./144 $\times$ 100

54.4 oz./14400 = 0.0038 oz. per sq. in.

or just 1/100 as much as in the other case.

Now let this be applied to chimneys; if a chimney such as indicated in "A" Fig. 4, and 12 in. x 12 in. 100 ft. high, filled with gases at an average temperature of 500 deg. Fahr., is considered, the factors are the same as when 100 one-foot cubes of gas

Table 1

Comparative Weights of Air Per Cubic Foot for Various Temperatures

Temperature Deg. Fahr.	Weight Per Cu. Ft. Lb.	Temperature Deg. Fahr.	Weight Per Cu. Ft. Lb.
70	0.075	450	0.044
100	0.071	500	0.041
150	0.065	550	0.039
200	0.060	600	0.037
250	0.056	650	0.036
300	0.052	700	0.034
350	0.049	750	0.033
400	0.046	800	0.032

are superimposed on each other while if a chimney 10 ft. x 10 ft. x 1 ft. high as shown in "B," Fig. 4, is assumed, the case of the 100 one-foot cubes laid flat is duplicated.

It now is evident why chimneys usually are constructed with a much greater height than their diameter; it is simply to get the cumulative effect of height. Had the 10 ft. x 10 ft. x 1 ft. high chimney been carried up to 100 ft. in height the difference in the weight *per sq. in.*

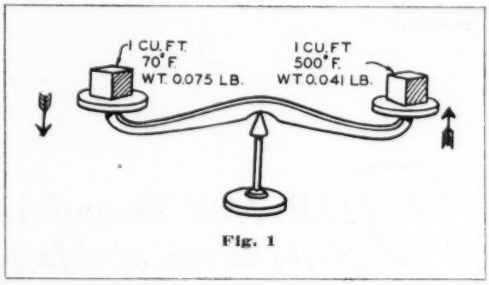


Fig. 1

of the gases would have been exactly the same as in the 12 in. x 12 in. x 100 ft. high chimney but it would have taken 100 times as much gas to fill the larger chimney. From this it will be seen that height and temperatures have a great deal to do with the draft while area has a strong bearing on the capacity.

Motive Power of Chimney

Thus is has been shown that the motive power (difference in weight of gases per sq. in.) in a chimney varies directly as the height when all other things are equal and this difference, expressed in inches of water, is termed the "theoretical draft." In the curve shown in Fig. 5, the theoretical draft has been plotted for different temperatures and for 100 ft. height. A 50 ft.

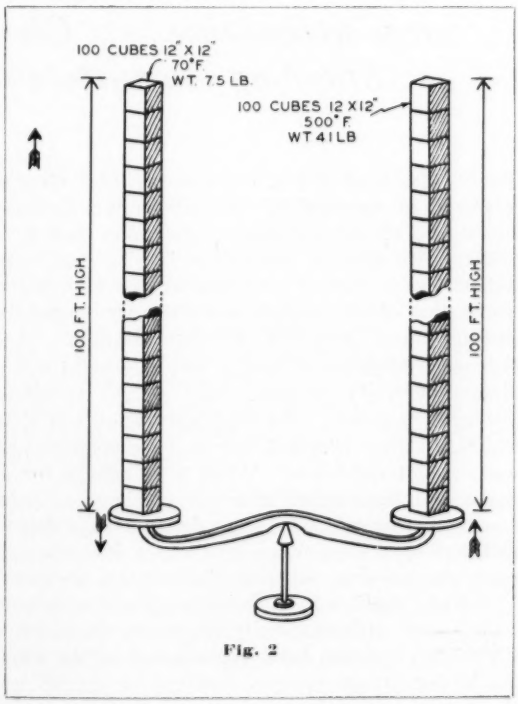


Fig. 2

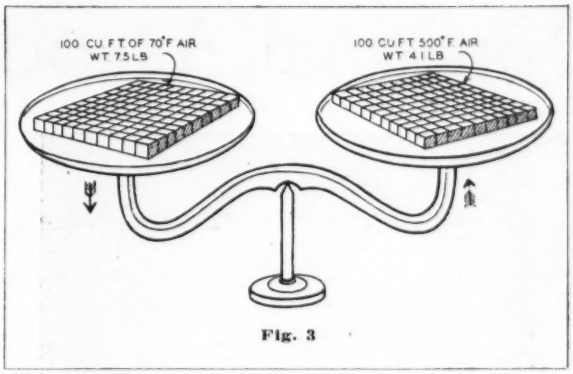


Fig. 3

stack would have 50/100 of the draft shown on the chart and a 150 ft. stack would have 150/100 of the draft given.

For example, what would be the theoretical draft for a chimney 225 ft. high with gases at an average temperature of 400 deg. Fahr? Finding the temperature 400 deg. Fahr., at the bottom of the chart and running up this line toward the top of the sheet until the curve is intersected, and then horizontally to the left, it will be found that the theoretical draft for a 100 ft. stack under the

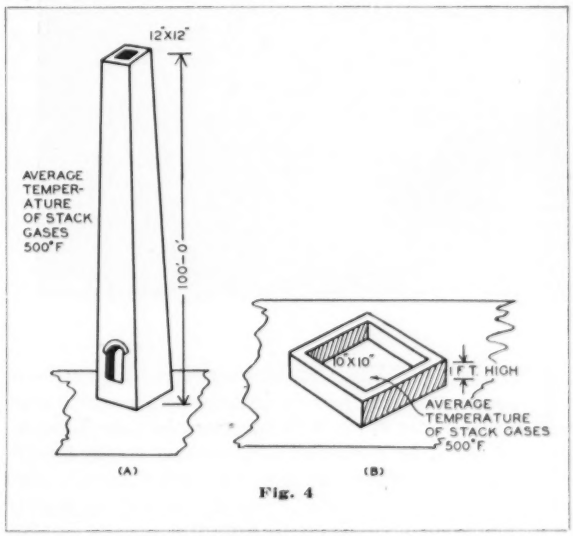


Fig. 4

conditions assumed will be 0.58 in. of water. Now for 225 ft. of height this theoretical draft must be divided by 100 and multiplied by the 225 ft., thus,

$$\frac{0.58 \times 225}{100} = 1.35 \text{ in. of water.}$$

If the average chimney temperature had been 600 deg. Fahr. instead of 400 deg. Fahr. the draft for a 100 ft. chimney would be found by following up the temperature line for 600 deg. Fahr. on the chart, and then to the left, where the scale would show 0.75 in. of water. Then for 225 ft. the theoretical draft would be

$$\frac{0.75 \times 225}{100} = 1.69 \text{ in. of water}$$

The figures indicate that the theoretical draft is de-

(Continued on Page 185)

National Association of Master

George H. Drake of Buffalo, newly elected president

THE 48th annual con
Association of Master
tendance with total regis
H. Drake of Buffalo, N.Y.
John A. Quinn's death, was
ly.... P. W. Donoghue of
vention and exposition com
al vice president.... H. O.
elected treasurer.... George
selected as secretary....
be held at Milwaukee, Wis.
conference.... Unusual ed
large attendance.... Close
....Standing committees re

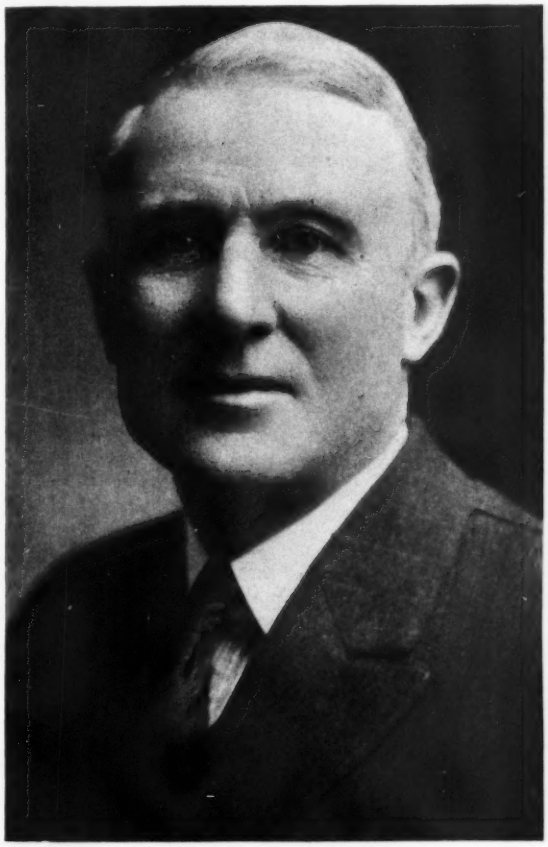
TERMINATING a rapid succession of hearty endorsements of the nomination of the man who has filled the office during the months since John A. Quinn's death, by a motion to make the choice unanimous, the forty-eighth annual convention of the National Association of Master Plumbers elected George H. Drake of Buffalo, N. Y., as its president for the coming year. Following Mr. Drake's nomination by John J. Vogelpohl of Cincinnati, himself a past national president, members all over the big hall vied for the chair's attention, and seconds to the nomination were registered rapidly by Judge Roberts of Philadelphia, Stradling of New York, Friend of Wisconsin, Berg of New Jersey, Henry of Connecticut, Hunter of Louisiana, Hickman of California, Kleine of Ohio, Clevenger of Indiana, Fink of Missouri, Swoyer of Pennsylvania, Zahnder of Kentucky. Then came the motion to close the nominations and to make the choice unanimous. Mr. Drake was escorted to the platform in a storm of handclapping and cheers. With equal enthusiasm the nomination as vice president of P. W. Donoghue of Boston, chairman of the convention and exposition committee, was received, seconded and his choice made unanimous.

For the office of treasurer, the names of Samuel F. Wilson of Newark, N. J., a past national president, and of H. O. Green of Tulsa, Okla., a national director, were placed in nomination. Mr. Green was indicated as the choice of the convention, and upon motion by Mr. Wilson his election was declared to be unanimous. President Drake, having been granted the approval of the convention of his choice of secretary, announced that he had appointed George W. Frank of Buffalo.

That the convention at Boston was successful will be illustrated by the registrations and by the attendance records at the exhibits. The total registration was 4,116, of which 546 were delegates, 769 master plumbers, 1,830 guests and 971 exhibitors. While total figures for the attendance at the exhibit have not yet been compiled, it was to be observed that during the four days that the exhibit was open there was a continuous flow of people through the building, showing the greatest interest in the products displayed. Officially, upon the floor of the convention, and unofficially elsewhere, the delegates and visitors expressed keen appreciation of the efforts of the Boston group.

The features of the three business meetings were the

Plumbers Elects Drake President



P. W. Donoghue of Boston, elected vice president

vention of the National Plumbers draws large attration of 4,116.... George who has filled the office since elected president unanimous- Boston, chairman of the committee, was elected Nation- Green of Tulsa, Okla., was W. Frank of Buffalo was Next year's convention will ....Approve trade practice ucational program attracts successful scholarship drive flect progress.

consideration of a number of important resolutions, the report by the scholarship committee of the fact that the fund which was set as its goal five years ago had been reached, the bringing before the convention by the Chicago delegation of the idea of "certified plumbing," and a splendid educational program, which is described in detail in the later pages of this report.

The closing moments of the last session of the convention were enlivened by a spirited contest between Milwaukee, Wis., and Detroit, Mich., for the privilege of entertaining the 1931 convention. Milwaukee's invitation was accepted.

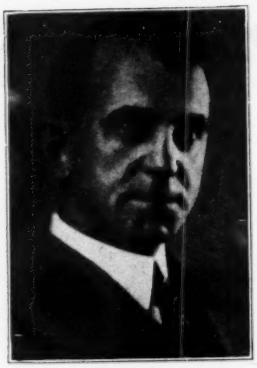
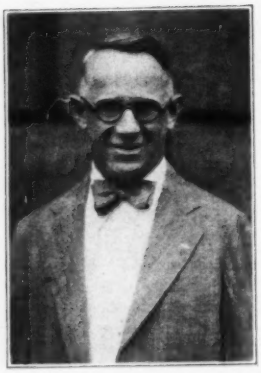
Resolutions Considered

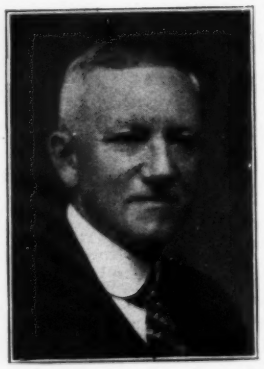
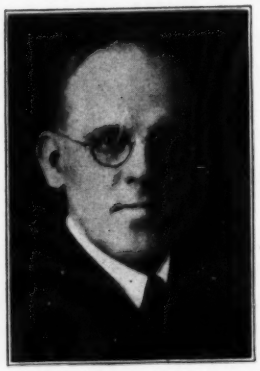
The resolutions committee, of which Samuel F. Wilson of Newark was chairman, brought in a number of important resolutions, on some of which there was a great deal of discussion.

The first resolution, submitted by the Wisconsin delegation, called for a change in the present method of electing officers at national conventions. The Wisconsin delegates felt that the election should not take place at the last session because it often prolonged that session. The committee, however, did not concur, as it felt that some of the delegates would lose interest in the convention and thus neglect important matters on the program. The convention agreed with the committee.

Resolution No. 2 called attention to the fact that the recent demise of President John A. Quinn had brought to light the insufficiency of the present constitution and by-laws to cover such an emergency, and recommended the appointment of a committee to study and review the present constitution and by-laws with a view to correcting such deficiencies. Committee and convention were agreed in the necessity for this revision. This was a New York resolution.

The third resolution, introduced by Texas, asked that the national body take up with the federal government the matter of the separation of the mechanical equipment from the general contract. Jere Sheehan, Jr., of St. Louis, a past national president, took the floor to point out that this matter had come before the national convention for a number of years. "Our conference committee," he said, "has done everything that any committee can do. I think that we can best preserve our interests if we will get together with the heating and piping and the electrical contractors, and attack this

Maney J. Feeney of Philadelphia, retiring secretary

George W. Frank of Buffalo, newly appointed secretary

problem as a unit representing the three interests. We are not going to have this action taken by the government in any other way. If we can get some kind of an arrangement by which we work with the other two units, we will get farther than going along single-handed."

Jere L. Murphy, of New York, chairman of the standardization committee, took the floor to urge the adoption of Mr. Sheehan's suggestion. He said that the association need not be discouraged because it had not secured governmental approval because in the state of New York it took twenty years to accomplish this. The resolution was adopted, with the amendment as offered by Mr. Sheehan.

On the Opposite Page

Tow row: Fred A. Beier of St. Paul, Minn.; Wilbur R. Dosher of Wilmington, N. C.; Robert E. Murphy of Chicago and Jere Sheehan, Jr., of St. Louis, all directors. Second row: A. H. Snyder of Detroit, C. M. Swinnerton of Los Angeles and R. G. Thomas of San Antonio, all directors. Third row: Roy E. Thompson of Tacoma, Wash.; George H. Werner of Orange, N. J., and Wallace T. Wordell of Taunton, Mass., all directors. Fourth row: Albert B. Dibble of New Haven, Conn., chairman of educational committee; Jere L. Murphy of New York City, chairman of standardization committee; F. W. Quinter of Washington, D. C., chairman of conference committee; John J. Shanahan of Norfolk, Va., chairman of apprenticeship committee

The fourth resolution, having to do with the trade practice idea, was not acted upon inasmuch as its intent was embodied in the report of the committee appointed to study the matter with the Heating and Piping Contractors National Association. Resolution No. 5 being the invitation of the Milwaukee association to the national body to hold the 1931 convention in that city, it was held over until that subject came up in the regular order of business.

The sixth resolution, presented by Wisconsin, asked that the national association remit or waive the per capita tax for the first year on all new members procured where there is an organized campaign for membership being carried on. Harry Sugarman of New York expressed the opinion that this was a matter for the attention of the committee which will be appointed to revise the by-laws, and this amendment was adopted.

H. O. Green of Tulsa, Okla., newly elected treasurer

Resolution No. 7, also introduced by Wisconsin, pointed out that in certain types of tubs the water is slow in running out of the tub and recommended that the standardization committee be instructed to confer with manufacturers with the idea of having the bottom of the tub raised, to facilitate its emptying. The resolution was adopted. Resolution No. 8 was also referred to the standardization committee for conference with manufacturers, with a view to eliminating "the use of china as a material for handles on plumbing fixtures."

The ninth resolution, presented by Kentucky, called for the appointment of a special committee to work with a like committee from the journeymen, to study conditions and help the industry in meeting the competition of those outside its ranks. The resolutions committee did not concur in this matter, as it felt that the condition must be handled by local and state associations. The convention supported the decision of the committee, and the resolution was lost.

Missouri introduced Resolution No. 10, asking that the national body consider seriously the question of appointing field men to act for the association in securing more members. The resolutions committee did not concur in this resolution, as it felt that the matter of field secretaries should be taken up by the individual states. "The expense incurred," said Mr. Wilson, "would be prohibitive, and a dangerous experiment for the national associa-

tion." The committee's decision was ratified by the convention and the resolution lost.

Resolution No. 11 embodied the Detroit invitation for the 1931 convention and was laid over until the proper time.

The state association of Washington submitted Resolution No. 12. This resolution requested the appointment of a committee to investigate "the trend of the plumbing and heating industry." The resolutions committee did not concur, as the resolution, it decided, was too vague and indefinite. The convention sustained the committee. Washington also presented Resolution No. 13, having to do with relationships within the industry, and this resolution was felt not to be a matter for action by the national association.

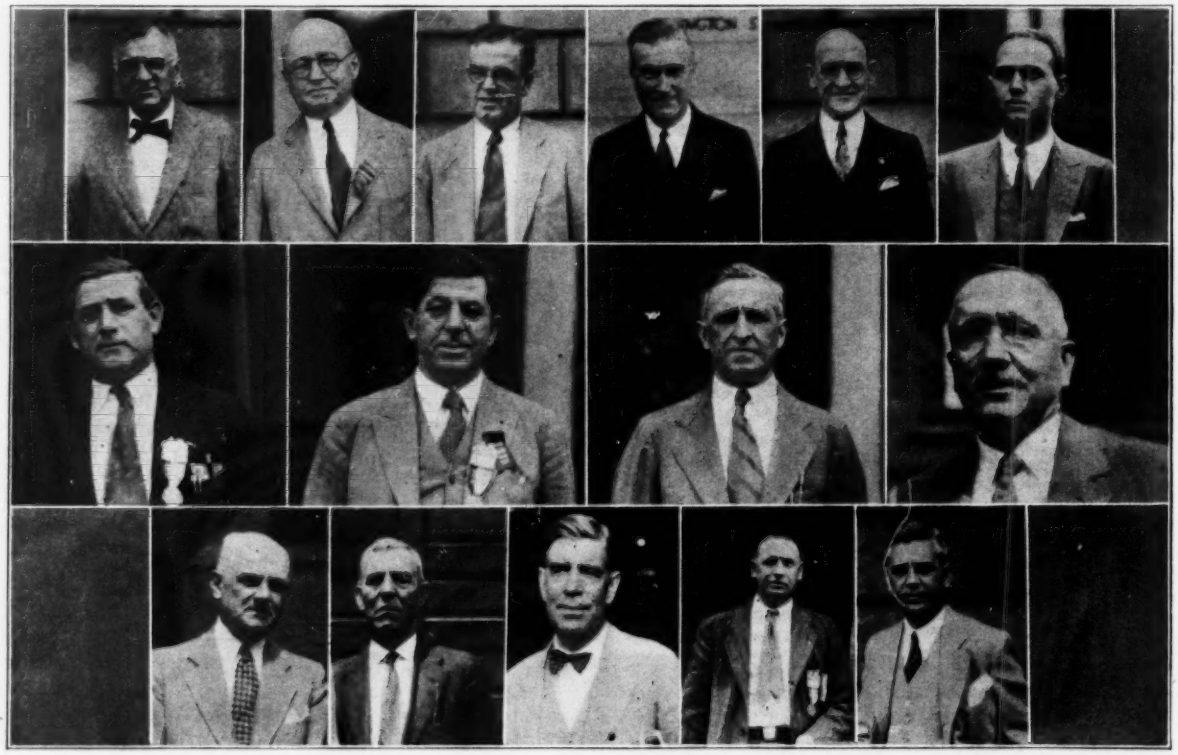
Resolution No. 14, requesting that the association go on record as endorsing the Capper-Kelly resale price bill, was concurred in by the resolutions committee and the question referred to the conference committee.

The fifteenth resolution was submitted by the national board of directors and read: "That we, the board of directors, condemn the practice, as has been called to the attention of the board, that some representatives or salesmen for wholesalers or manufacturers offer their services to contractors in estimating on work, or assist in compiling estimates or offer service other than promoting the sale of their products. We consider the above, which we object to, to be an unfair trade practice." The resolutions committee concurred and the convention accepted the resolution, with an amendment offered by Jere Sheehan, Jr., to the effect that a copy be sent to various wholesalers' and manufacturers' associations.

The sixteenth resolution brought out an interesting description of a plan for securing attendance at convention sessions. The resolution, as offered by the Louisiana-Mississippi association, asked for a "roll call of all delegates at the opening of each session and the results of the roll call to be printed in the official proceedings." Mr. Wilson, reporting for the resolutions committee, said that the committee did not concur in the resolution, but did agree with the thought expressed.

Charles M. Swinnerton, of Los Angeles, a national director, took the platform to describe the method followed by his state. Captains of local association delegates are appointed, he said. It is their duty to check the attendance at sessions of the members of their own delegation, and not until these reports are in the hands of the state body does the individual delegate receive the amount allowed for his expenses, and this amount is allowed in accordance with the attendance record.

C. A. Hunter of Alexandria, La., president of the Louisiana-Mississippi association, explained the intention of Resolution No. 17, submitted by his association.



Top row: J. Preston Perham, Boston, Mass.; Joseph Maynard, president of Eastern Supply Association, also Boston Brass Co., Boston, Mass.; Charles B. Nash, advertising manager, Standard Sanitary Mfg. Co.; A. M. Maddock, Standard Sanitary Mfg. Co.; Thomas F. Nolan, past national president, Albany, N. Y.; Walter J. Kohler, Jr., manager, merchandising department, Kohler Co., Kohler, Wis. Middle row: J. J. Downey, chairman, parade and grand ball committee, Boston; Robert LaCentra, chairman, program committee, Boston; James G. Gillespie, vice chairman, general committee, Boston; Albert Roberts, president, Boston association. Bottom row: W. K. Glen, advertising manager, Crane Co., Chicago; A. F. Curtin, Sr., A. F. Curtin Valve Co., Medford, Mass.; J. S. Cassedy, past national president, Cambridge, Mass.; R. T. Thatcher, Fairhaven, Mass.; C. W. Wanger, Woodward-Wanger Co., Philadelphia

A group of exhibits at the convention. Top row: Wolverine Brass Works, Grand Rapids, Mich.; American Radiator Co., New York City. Second row: A. F. Curtin Valve Co., Medford, Mass.; Sloan Valve Co., Chicago. Third row: "Domestic Engineering," Chicago; Nash Engineering Co., South Norwalk, Conn. Bottom row: Walworth Co., Boston, Mass.; Crane Co., Chicago

This resolution asked for an investigation of the advisability of offering to national members an insurance policy on life, health and accidents, on the group insurance plan. The purpose of this group insurance, Mr. Hunter said, would be to place in the hands of members a benefit which it would be easy to make plain to the prospective members as one of the advantages of belonging to his local, state and national associations. Mr. Swinnerton again took the platform to explain that in California the association "realized the necessity for something to hold our membership and to show that we are vitally interested, not only in their progress and in their business, but that we are interested in their families as well. We, therefore, got together and formed a mutual protective association for the master plumber of California. This has worked out admirably. We have found that the women behind the men demand that they stay in the organization. During the past year, five members of the state association passed to their heavenly reward. Three days after each of these men died, their widows were presented with checks for $1,036, the only necessity being the death certificate in the hands of the state. It is not necessary for a member to take a physical examination. There is no age limit. The dues when he enters are $9 and this takes care of three assessments. At the death of any member, an assessment of $3 is levied on every member of that mutual benefit association."

The recommendation of the resolutions committee was that this matter be referred to the board of directors for investigation as to the feasibility and practicability of such a plan and to report back at the next convention. The convention adopted the recommendation.

Resolution No. 18 was withdrawn.

Resolution No. 19, taken from the report of President Drake, was adopted by a rising vote. President Drake recommended in his report that the usual testimonial voted by the convention to the retiring president be given to Mrs. John A. Quinn, "as a slight token of our appreciation for the work done by Mr. Quinn in arranging the schedule for the national office during the past year and the splendid results as evidenced by the treasurer's and secretary's reports, which show a substantial increase in the assets accumulated under his program.

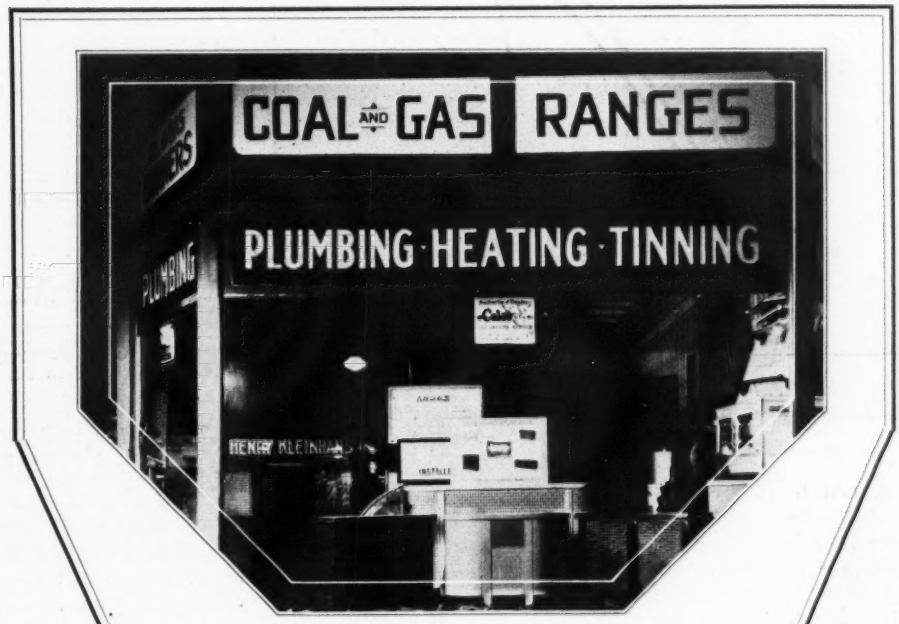
Resolution No. 20, setting forth the thought that the convention go on record as disapproving of distribution which disregards the integrity of those engaged in the trade, was concurred in by the resolutions committee as being an expression of the policy of the association. The convention concurred in the committee's approval.

Much discussion arose over the twenty-first resolution, offered by the Connecticut association. This resolution covered the practice "of quoting the consumer direct and withholding or refusing to quote those engaged in our business." The committee did not concur in this reso-

(Continued on Page 118)

State presidents attending the National convention—Top row: G. P. Seeley, Pontiac, Mich.; W. E. Stradling, Utica, N. Y.; Louis R. Friend, Milwaukee, Wis.; E. L. Clevenger, Muncie, Ind.; M. L. McKay, Rock Island, Ill.; Alex T. Berg, Orange, N. J. Middle row: S. E. Scholze, Birmingham, Ala.; E. B. Clayton, Denver, Colo.; William J. Henry, New Canaan, Conn.; H. W. Strader, Minneapolis, Minn.; J. J. Cosgrove, Oklahoma City. Bottom row: E. J. Harrington, Phoenix, Ariz.; John Zehnder, Louisville, Ky.; C. A. Hunter, Alexandria, La.; Louis Fink, St. Louis, Mo.; Claude Hickman, San Pedro, Calif.; E. D. Swoyer, Allentown, Pa., all State presidents

PLUMBING & HEATING MERCHANDISING



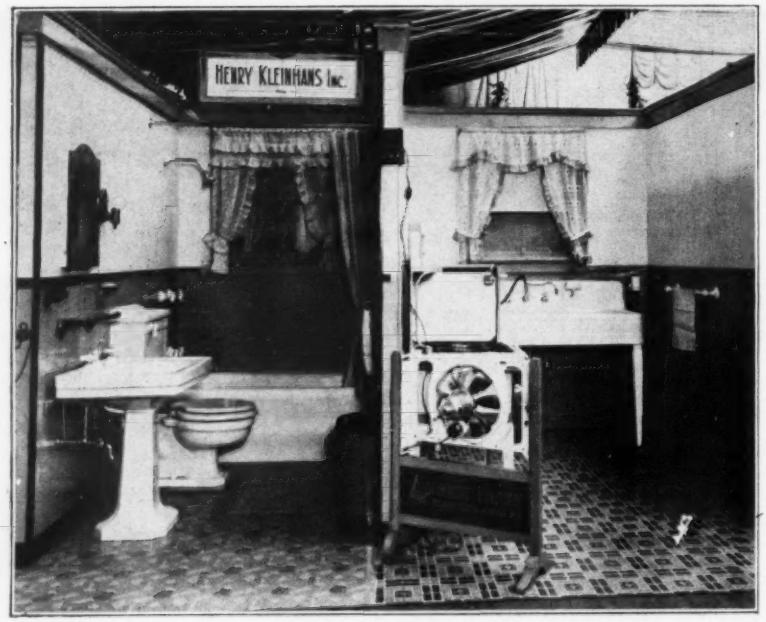
Profits on One Item Pay His Rent

A New Jersey contractor who finds merchandising profits entirely satisfactory

FIFTY years ago the business of Henry Kleinhans, Inc., was established. In those days the masters did more leak fixing than merchandising and Henry Kleinhans was no exception. But today, under the capable management of John Kleinhans, son of the founder, this store has become a merchandising mart for the retailing of plumbing and heating equipment. Mr. Kleinhans specializes particularly in radiator enclosures, oil burners, gas ranges and bathroom "jewelry" and of course, he also pushes enameled ware and heating fixtures. The profits from the merchandising of these lines far surpass the profits the company used to make on contract work and repair jobs, Mr. Kleinhans says.

Merchandising Profits

Said John Kleinhans, "This store is located in the central section of Elizabeth, New Jersey, where rents are high, yet the profits on radiator enclosures alone pay the rent. We get business for our lines because we go after it. Window displays, of course, help but you must also utilize direct-mail, outside selling and newspaper ads to get maximum results. Radiator covers are big sellers today and they sell all year round. However, when you install these units be sure to match them up in period and color with the other room furnishings. It takes a little more time and may even cost you a little more money but you will be well repaid with satisfied customers who will recommend your work. Not long ago I equipped a home with radiator covers and when I got to the bedroom, the furniture was finished in bird's eye maple—an odd finish today—but I made it my business to get in touch with the factory and at extra expense to myself, had them make me up two bird's eye maple enclosures. They matched perfectly and the customer was so delighted with the general appearance of her room after I had finished my work that she has been recommending me to all her friends and as a result I have landed at least six new customers, who have bought either an oil burner, radiator enclosures or some



Making a home show exhibit look like home

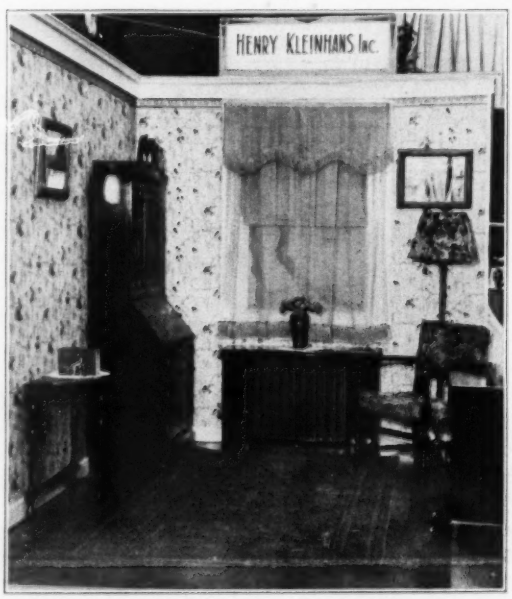
other plumbing and heating equipment." Complete details of enclosure selling are given later in this article.

Mr. Kleinhans also suggested that the master plumber have pictures taken of his best installations of oil burners, radiator enclosures, bathroom fixtures and such, and if possible, in some cases, get before-and-after pictures to show prospects how home surroundings may be changed with modern plumbing and heating merchandise. One of the photos accompanying this article shows the type of picture that favorably influences sales, according to this master plumber. Another picture showing the ugly radiator before the enclosure was installed is usually all that is needed to close a sale. "Pictures talk more eloquently than words," says Mr. Kleinhans, "therefore, photographs of his best installations enable a master to close sales with less energy and more dispatch, which, in the long run, means that he will close more sales and make more profits. If a picture is taken of an installation made in the home of a friend of some prospects, the master should stress this point because most women like to keep up with the Jones's and even if they are not envious, they are in other ways influenced by purchases made by people they know. The pictorial idea in the merchandising of plumbing and heating equipment has big sales possibilities and if the master plumber has such pictures bound in portfolio form, he has a strong selling talk right between its covers. He may take such pictures himself if he understands photography, or someone in his employ may be able to do the work. If not, a commercial photographer can make prints at a reasonable price. I find that the investment in such photos pays dividends.

Calls and Demonstrations Sell

"The oil burner is also a profitable line for the master plumber if he uses selling effort to get it into the cellar. From my own experience, I know that it pays to go out after sales. However, if a master is not equipped to do this work himself, he should make some effort to procure one or two outside men, either on salary or commission. I personally follow all leads, which come to me as a result of newspaper advertising, direct-mail, manufacturers' coupons clipped from national ads, and phone calls, and I make many sales of plumbing and heating equipment outside of the store. Phone calls and direct-mail are two good methods of getting live leads. I do not think it pays to pull doorbells to sell merchandise of this kind, but you can eliminate the poor possibilities by a phone canvass or by circularizing people in your territory.

"Store demonstrations sell gas ranges, but it is necessary to include actual baking operations because housewives want more than just lectures on cooking or on gas range operation. If you circularize a list of housewives, advising them in a short letter, that on a certain day an expert from one of the large food companies or gas range manufacturers, will be in your store to give pointers on cooking and an actual demonstration to prove such points, you will bring in many prospects, because modern women are intensely interested in seeing just how good cooking is produced. In days gone by, the homemakers were satisfied with cook books, but 'them days have gone forever,' because cook books never told the whole story. It is surprising how much information experienced housewives will get from these cooking demonstrations and what simple questions they sometimes ask, despite the fact that they may have been cooking for years. Then, too, the mechanical time-keeper on modern gas ranges makes a big hit with women. A demonstrator will put the cake batter in the oven, adjust the time-keeper, close the door and forget about the cake, then

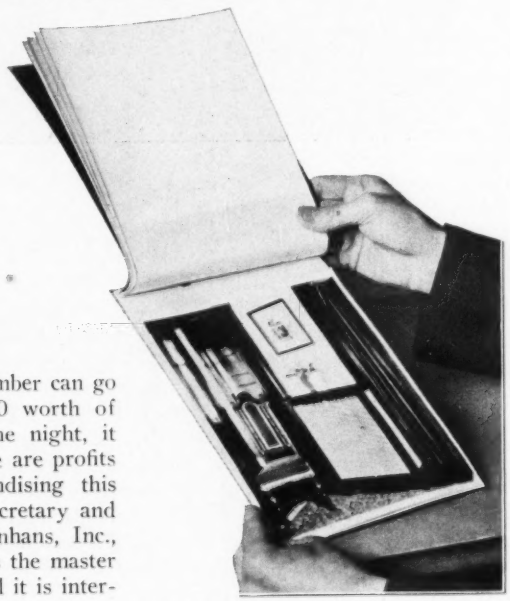


This whole room was built to set off the radiator enclosure

the range shuts off the heat automatically when the cake is done. After such a demonstration, it is not difficult to picture to a housewife how nice it is to put a roast in the oven, set the regulator, go to the 'talkies,' then come home and find the meat all ready to serve. This regulating device on a gas range when coupled with cooking demonstrations pulls many sales for me.

"We use direct-mail in connection with store demonstrations, newspaper advertising and outside selling and find that the manufacturers' sales stimulators are excellent sales-pullers. Many prospects whom we have circularized, come in here with this literature right in their hands and make purchases. If more plumbers would use these selling aids, they would make more money." Mr. Kleinhans also uses bill-board advertising to sell gas ranges and oil burners and he has five boards in the most prominent sections of northern New Jersey, yet, within driving distance of the store.

How to Sell Radiator Enclosures



How Kleinhans salesmen show pictures of actual installations

WHEN a master plumber can go out and sell $1,200 worth of radiator enclosures in one night, it certainly shows that there are profits to be made in merchandising this line. John Kleinhans, secretary and treasurer of Henry Kleinhans, Inc., Elizabeth, New Jersey, is the master who made this record and it is interesting enough to relate.

A prospect called up one evening and asked for information about a radiator cabinet in mahogany finish that was being displayed in the show window of this plumbing and heating establishment. Mr. Kleinhans suggested that the prospect allow him to call with a few samples so that he could go thoroughly into details and the prospect agreed. So this merchandising master put two radiator enclosures in his car and went to the address given him. The result was an order for radiator enclosures in every room, the sale amounting to $500.

As usual, Mr. Kleinhans asked this purchaser if he had any friends or relatives who might be interested. This master plumber sells a great many radiator enclosures by getting sales leads from people he has sold. The purchaser in this case stated that a relative in Cranford about ten miles away had expressed a desire for some cabinets, so Mr. Kleinhans went there the same night and got a $400 order. This purchaser gave him another tip and he landed a third order totaling $300 in Westfield, a town five miles from Cranford. In all he sold $1,200 worth of these units in three different towns on the same night as a result of one phone call that originated in a window display.

Enclosure Sales Increasing

"We have been selling radiator enclosures for more than two years," said Mr. Kleinhans, "and sales have been increasing steadily. There is a tremendous field for this line because comparatively few homes are equipped with radiator enclosures, and building contractors are not yet generally installing them on speculative constructive work, although I think that very shortly a newly constructed home without radiator cabinets will have as much chance of being sold as a home without a bathtub.

"Because of the broad appeal in radiator enclosures, we always include them in our show window with other lines and during the winter months we run many unit trims featuring this merchandise exclusively. In the nights we illuminate these window displays using colored spotlights to get effect. Our window displays catch plenty of eyes because we are in a central location and probably twenty-five per cent of our radiator enclosures are sold as a result of show window installations.

"The radiator enclosure is a good leader for a plumbing and heating contractor because it leads the way to sales of other equipment. Many times we have sold an oil burner, a toilet, or some bathroom jewelry as a result of a radiator enclosure lead.

"In addition to window displays, we use newspaper ads, direct-mail, outside salesmanship and our journeymen help us sell these cabinets. We do not depend upon any one of these merchandising agencies to get results. We co-ordinate them all into one strong selling appeal and this keeps business stepping right along. Furthermore, we do not stop advertising if business takes a slump, but keep after the elusive sales more than ever. If the master utilizes all of the modern methods of merchandising and keeps at it doggedly, he will find profits at the end of the year, not only in radiator enclosures, but in the sale of other plumbing and heating merchandise. Also be sure to instruct your journeymen to watch for leads while they are out doing repair work in private homes. If a journeyman goes into a well-appointed home and sees ugly radiators, he should report it because you have a good chance to sell radiator enclosures there."

Using the Enclosure as a Wedge

Henry Kleinhans, Inc. use outside canvassers to sell merchandise, and although these men try to get business for all kinds of plumbing and heating equipment, nevertheless, they open up with sales talks on radiator enclosures, because this line may be placed in the same category with furniture and it therefore has a strong appeal for women. You cannot get a housewife very much excited about

a new boiler unless she is freezing in her home, but she will always have time to admire radiator enclosures in beautiful finishes that match her other house furnishings. That's the eternal feminine.

These outside salesmen carry cards with the company's name on them and in view of the fact that this plumbing concern has been in business for fifty years, these canvassers have little trouble getting audiences with housewives. When a Kleinhans salesman is once inside the home, he can size up the situation fairly well. By the time he leaves, he may have talked about everything from a radiator enclosure to a septic tank. These salesmen work on a ten per cent commission and supply their own cars. Mr. Kleinhans advertises in the newspapers to get such men and advises against paying them straight salaries. If an outside salesman has the ability to get business, says this master, he will work on commission. Of course, Mr. Kleinhans co-operates with these men in every way and helps them close sales whenever possible. He sometimes has as many as six men on the outside digging up business before and after the annual "Own your own home" show held in Elizabeth, at which affair Mr. Kleinhans exhibits in three booths, one of which is used for radiator enclosures. The men who follow up these leads carry manufacturers' literature and if a prospect expresses a desire to see a radiator enclosure, Mr. Kleinhans brings one around in a leather case. This sample outfit is supplied by the manufacturer.

Proper Direct-Mail Selling

All calls are followed up with direct-mailing literature supplied by the manufacturers and sometimes a special letter is written on an illustrative folder. In using direct-mail, be sure that your mailing list is a good one, advises Mr. Kleinhans. Pick your names carefully and do not mail literature to people who cannot afford to buy your merchandise. Many a mail-sales campaign has been killed from the start by the compilation of a poor list. He finds that a good list cannot be procured from addressing companies, and the directory and phone book have been worked to death. However, every locality will produce certain good sources for lucrative lists if the master will keep his eyes and ears open. In this section there are a great many women's clubs that yield excellent returns if the club-members are circularized, and when you please one club member, she tells the rest. Word-of-mouth advertising usually gets more results than any other kind. Marriages, engagements, deeds to new homes and building permits also offer opportunities to sell radiator enclosures, and the master can get such data from the county and city records, following up these names with phone calls, personal solicitation, outside salesmen or direct-mail.

"Radiator enclosures are good holiday sellers," commented this master plumber. "If you push them around the holidays many people can be induced to give them as gifts. They are certainly something different and that is what the average Christmas shopper is looking for. We work from early morn until late at night around the holidays and the master should not overlook the gift possibilities in his lines. During the remainder of the year it is also necessary to work late at night if you wish to merchandise radiator enclosures and other equipment on the outside. If an outside salesman declines to work nights, do not employ him because ninety per cent of your sales are made after supper. It is said that women make more than eighty per cent of retail purchases, but a woman buys few articles of high unit value without her husband's consent. You must therefore get man and wife together when selling radiator cabinets and this means night calls because the average man is away from home during the day.

This is a picture out of the book of installation photographs

Sales Arguments

"The radiator cabinet sells, for one thing, because it is decorative, but the master who depends upon that factor entirely will not get maximum results. There are other things besides beauty that sell this line. The other night I made a $450 sale to a man and woman, and the woman really sold her husband. She said, 'We had better order these enclosures because we are buying new draperies every year due to the dirt that our radiators make.' The husband quickly realized that he could save an annual outlay for draperies that would amount to the cost of radiator cabinets in a few years so he signed up. In the modern, well-appointed home it must be remembered that draperies cost real money and even then, they look jaded after a few months; therefore, the home manager is interested in anything that will keep her hangings looking spick and span and which will prevent too frequent renewals. Protection of home furnishings is a strong point in selling radiator enclosures.

"In general, our selling arguments follow the line that the uncovered radiator has no place in the well-appointed home, that a radiator cabinet will convert it into a cozy window seat, an attractive console or a lovely odd piece for a lamp, vase, candlesticks or flowers, and that, aside from its decorative features, the radiator cabinet is useful, economical and

saves coal bills, doctor bills and repair bills by preserving an even heat in the home, by maintaining a healthful humidity and by keeping drapes, floors, rugs and furniture free from dirt and dampness.

"We tell a prospect that often an exposed radiator will not properly heat a room because it does not develop efficient air circulation and the room will be cold at the floor or breathing level yet very warm around the ceiling, because warm air rises and will stay at the top of a room unless set in motion. Poor circulation also makes ceilings sweat because the warm air, which contains more moisture than cold air, moves to the top of a room, staying around the ceiling, and unless there is good roof insulation, the ceiling, being colder than the air touching it, will cause this air to release some of its moisture, which settles on the ceiling and upper parts of the walls. Did you ever see dew on a cold pitcher, we ask a prospect? Of course, she says 'Yes' and then we explain that the film of air surrounding the pitcher has been cooled below the saturation point, thus a certain amount of moisture must be given up and it settles on the outside of the pitcher. Water never collects on a warm pitcher because the temperature of the water within it is not low enough to bring the temperature of the outside air film down to a colder point where it must release some of its own moisture. A properly constructed radiator enclosure, by keeping the air in circulation, helps to provide even temperatures in a room at minimum expense.

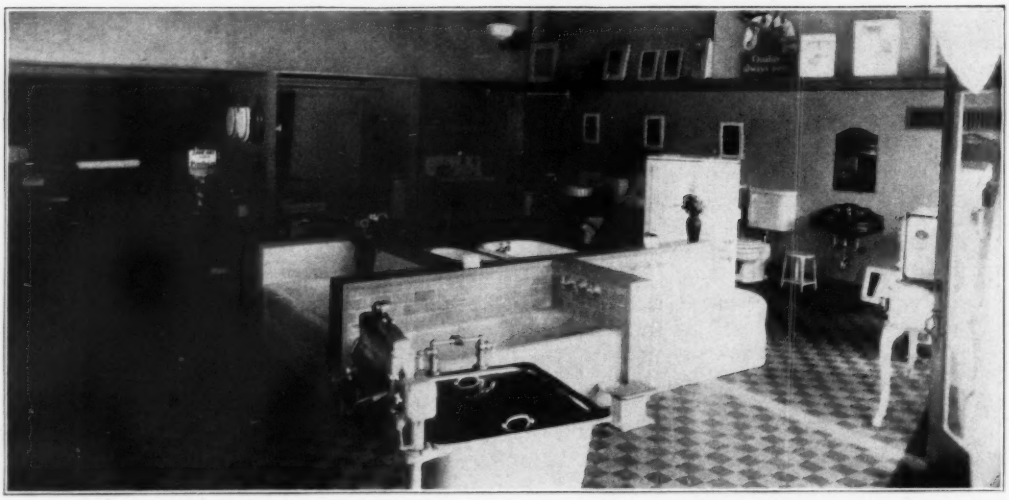
More Sales Arguments

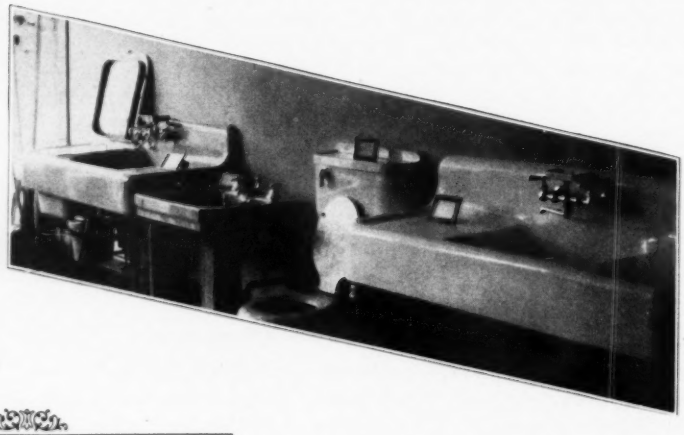
"We not only show the prospect where she can save money on her draperies and other home furnishings by investing in radiator enclosures but we talk about fuel economy. Experts say that a well heated room should register 70 degrees at the breathing line, we explain to the listener. At ankle height the thermometer should read 66 degrees and 60 degrees at the ceiling. Then we will check the temperatures in her rooms with a thermometer and often it will be found that the floor temperature is well below 60 degrees and the ceiling around 90 degrees, all due to poor circulation. Of course, this would only hold true on cold days. This means that the heat loss through the upper part of the wall is excessive and it is not difficult to show a prospect that she is paying too much money to heat her home. Most women think that their coal or oil bills are too high anyhow, so you have little difficulty in convincing them that exposed radiators are expensive as well as lacking sometimes in decorative qualities.

"Health and fewer doctor bills taken together produce another talking point in selling this line. We explain that the radiator cabinet contains a humidifier to regulate the amount of moisture in the air, and state that dry air is unhealthy, uncomfortable, injures furniture and does harm to lungs and nasal passages. Dry air does not exist in nature. There is moisture in the air over the Sahara Desert as well as over the North Pole, hence, air that is dry has been mechanically dried and it must be mechanically humidified to provide the proper moisture. Dry air is also extravagant in fuel consumption as well as in medical attention. It feels cold at 75 degrees, whereas properly humidified air is comfortable even at 68 degrees, and one authority has estimated that from 20 to 25 per cent of the cost of heating a building is expended in raising the temperature from 65 to 75 degrees.

"All of these things are semi-technical and if explained to people in simple, understandable English, they will buy radiator enclosures because these units represent an investment and not an expense, and they can be made to see this readily if the facts are properly presented. Sell the woman on the beauty of radiator enclosures and the big help they will be in keeping her other furnishings clean, which not only helps her to maintain a tidy home but saves her work. Then sell the man on the economy of fuel consumption and finally talk to them both on the health-building qualities of radiator enclosures. If they have children, stress the dangers to growing youngsters if they are forced to live in homes where the air is not properly humidified. With these sales arguments you should close the majority of sales. There is probably no line that offers the master a better opportunity to justify their installation than radiator enclosures."

Another charming photo showing the beauty and usefulness of a radiator enclosure

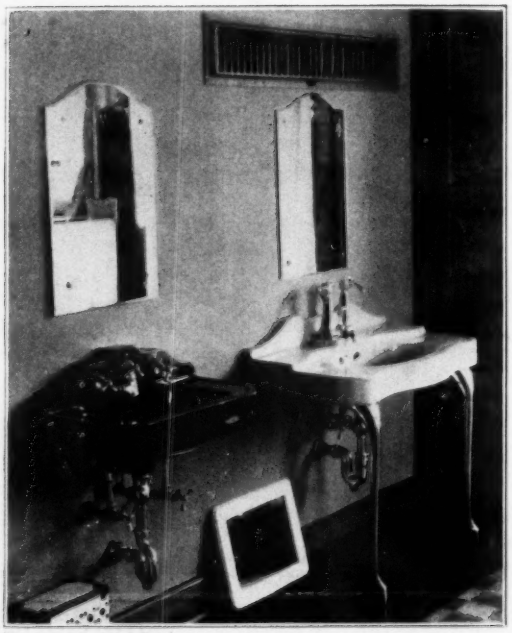




An Effective Display

THE Schmidt-Watkins Co., 1518 Gallia street, Portsmouth, Ohio, has a display room that is effective from the standpoint of selling. Note the number of fixtures and specialties displayed. Besides the usual plumbing fixtures, there is the gas range, dishwashing sink, washing machine, mirrors, water heaters, bath stool. Note also the two fine lavatories displayed with appropriate mirrors.

Display rooms like these, all over the country, are making sales and building prestige for the industry.



Don't be too anxious to make the sale—it is one sure way to arouse antagonism in the prospect's mind

Some Ways to Close a Sale

The Master Salesman outlines a few methods for getting the prospect's name on the dotted line

WHEN we review the many angles to all earlier stages in the development of a sale, the small points to be picked out and analyzed in each step, there is a likely inclination to speed up on the closing. Yet, without having guarded against working too fast in the different stages of the approach, studying and knowing the mental attitude of the prospect, and building value, in the third step, the salesman would have lost his sale long before reaching an opportunity to close.

Having guarded against any impetuous move up to this time, the mental attitude of the prospect should be watched with the greatest of care before saying the few words that will make or break the sale. All preceding objections having been overcome, what does the analysis of the moment show of his attitude? How many, if any, questions asked had left a doubt in his mind? Are such questions vital to the issue? These conditions must be well understood before driving for the close.

Taking the Order for Granted

One of the best methods of bringing out the favorable decision is to put the closing effort over in a conversational spirit; in other words, instead of making any definite remark that could be definitely taken as a request for the order or even saying, "Suppose I go ahead with the installation, etc.," begin talking about the job as though it were right then in process of installation. "Mr. Prospect, do you know, while talking with you, I've just been wondering if we won't do better if we place the lavatory over there instead of here (indicating by drawing the bathroom on a piece of paper). Don't you think it will make a little mite more room that way, etc.?" Making him answer that question leaves it open for the salesman to follow up and say, "Well, we will do it that way. You are the one to decide that. Now, I'll have the roughing material all laid out and ready to start the work on Monday—the fixtures will be here Wednesday, and I think by Saturday we will be all through. We seem to have covered everything you want, Mr. Prospect. (Keeping right on), I'll leave this copy of the estimate with you and you can mark this one, 'Approved and work authorized,' so that you will have a record of just what is to be done."

Then have the fountain pen handy and get his signature. A signed authority for the work is not always necessary, but something written in the hands of both parties, signed as an acceptance of conditions stipulated, often saves bad feelings and argument later.

I have seen this manner of obtaining definite acceptance work a hundred per cent successfully more than once. It is the attitude of "well, now that everything is settled" that puts it over. Seems to just help the prospect enough in making his decision that he feels rather pleased that the salesman seems to know so well what he wants. Just recently, having had a closing of this character under personal observation, I heard the cus-

tomer actually thank the salesman for the help he had given. The appreciation was really sincere, due to the manner in which the salesman presented his story. He wasn't selling, he was helping the customer to buy right.

Another very practical and decidedly successful way of opening up the closing angle is to say: "Now, Mr. Prospect, before I go ahead with this work, suppose we go up to that bathroom and I'll take my rule, measure off the size of the fixtures, and see if I have planned to set them just as you wish."

Handling the Weak Prospect

When the buyer is the opposite type—one who lacks the power of making decisions independently, then a little pressure is needed. In such instances, the customer must not be permitted to think alone. The salesman needs to have his estimate or contract all complete, ready for signature. That signature must be affixed and the contract put in a pocket, out of sight as quickly as possible. The salesman does not want to linger very long afterward, either. Continued conversation on the subject of the contract is likely to develop a thought that might cause the customer to weaken and recant. To get this signature, make it quick and snappy, like this:

"We have gone over everything pretty thoroughly, Mr. Prospect. Have I covered everything just as you want it done? Very well, please sign this estimate right here. It is your copy of what you want done. This copy I've already signed—you keep that, and I'll take this one." Then fold up his copy and hand it to him folded. Eliminate any thought of reading it over again. Then with less than five minutes of general conversation, get out of the picture.

But after all these points on the successful closing, what about the unsuccessful attempt with any of the prospects as we have set up the characters?

Suppose the first prospect we have described should come back against the "taken for granted" attitude and say: "Before we go into this matter further, I want to discuss the price. I think this job is going to cost too much money. Suppose we let this stand for a day or two."

The salesman should avoid any reference to the suggested delay. Of the two, the price question is least dangerous. Delay will mean competition, and that is what he is to avoid most.

When Price Is Questioned

He could answer: "You can use cheaper fixtures, cheaper pipe and fittings than I intend using, but I don't want to put in what may later on cause you regret. When I have finished this job, my reputation is behind it, and I want to know it has pleased you. I want to know that I have increased the value of your property by my labor."

If that one doesn't work, this one might: "Mr. Prospect, it is your home, a place in which the pride of every one of us is centered. I might take out one or two of these fixtures and substitute some cheaper ones; or, I could give you nickel plated fittings instead of chromium plate, but I would be destroying the very finishing touches you want to put to your home. It is hard for you to visualize the difference in the effects between cheap and good fixtures, but I am offering you the benefit of my experience and recommend that you do not consider it."

If the question develops the point of actual figures, say fifty dollars high, make this suggestion: "Mr. Prospect, the question of that amount of money is easily settled. Come to my showroom with me, now; if you want the cheaper fixtures, I'll put them in, but when you see the two values, side by side, I am sure you will realize that I am considering only that which will give you the greatest value in the end."

Another prospect seemingly all set for closing will either hesitate without explanation or will frankly admit his intention to get another bid. Any evidence of mental disturbance over his declaration will show keen anxiety to land the order and make him be more determined to wait for another bid. In a case of this kind, failing to close at once, never leave the details of the proposed job for the other man to work on. He will have all the advantage. Try this angle first:

"Your idea of another bid is your privilege, of course, Mr. Prospect, but I would like to ask you a couple of questions which you may not answer, if you do not care to. Have you investigated my reputation as a master and business man? Why not call up the Union Bank? I have done work for them for years. Usually bankers are considered conservative. They never question my charges, and have always spoken well of the character of work I do. Possibly you will have the confidence in me I had hoped to inspire after hearing what they say. Their phone number is Graystone 229. We'll call them now." This diverts the customer's mind somewhat, and if he can be induced to talk to the references he will be a willing listener to sound reasoning on the subject of paying a right price to have things done a right way.

Don't Worry About the Sale

The fundamentals of selling, after all is said about it, are just using common sense, thinking the thoughts of the customer and finding the way to avoid antagonism. Of all the various steps in effecting a sale, doubtless the most dangerous is the point of closing because of the "so near and yet so far" feeling that often pushes the salesman into a "high pressure" attitude just when he should seem least to be under pressure.

At any time, evidence of a selfish desire for the order arouses resentment, or at least opposition. Making the customer feel convinced of a sincere effort to please him regardless of what the sacrifice may be to the salesman's opinion, brings about a state of friendly consideration and creates the feeling that leads the customer into the desire to give the order.

I once had a very wonderful master of salesmanship say to me, "Don't worry about the order, that will take care of itself, if your customer's mind is right. Concentrate all of your thought and study on the mind, not the material. If you can get the customer honestly listening to what you say, he will buy your merchandise, you won't have to sell it."

Good salesmanship never forces to the point of antagonism. "Reverse English" tactics are used. By agreeing, yet leading, the customer is turned around and finally induced to do the agreeing; that is where the closing comes in. Try to say that which makes him feel he had made the decision and that the suggestions of the salesman just happened to be in accord with his ideas.

A.S.H.V.E. Shows Scientific Progress

Society holds semi-annual meeting at Minneapolis; Interesting papers are read; W. H. Carrier and F. B. Rowley nominated for president and 1st vice president, respectively

L. A. Harding, president

MINNEAPOLIS, Minnesota (city of many waters), with eleven lakes within its borders and the Mississippi River which helps to turn the wheels of its great flouring and other industries, welcomed the American Society of Heating and Ventilating Engineers for its thirty-sixth mid-summer meeting and recreation on that city's fifty-eighth birthday. Members and guests from many parts of the United States as well as from foreign countries were in attendance—Hugh Kelly, heating contractor, Edmonton, Canada; H. Gille, teacher of heating and ventilating and consulting engineer of Stockholm, Sweden; Julian Flegenheimer, architect of the League of Nations Building, Geneva, Switzerland, and others.

During the four days, June 24, 25, 26 and 27, in addition to the technical sessions and committee meetings, there were receptions, luncheons, card parties, sightseeing trips, golf tournaments, dances, bridge parties, garden parties and the usual banquet provided for their three hundred members and guests in attendance. The Minneapolis-Honeywell Regulator Company provided sightseeing busses which toured Minneapolis, St. Paul, visited the University of Minnesota and the Lake Region and ended with a visit to the Minneapolis-Honeywell plant. Professor F. B. Rowley, head of the research committee and head of the Engineering Experiment Station of the University of Minnesota, took many members up in his airplane for a bird's-eye view of Minneapolis and surrounding territory.

The local general arrangements committee under the direction of A. Buenger, president of the Minnesota Chapter and his corps of committee chairmen, Mrs. F. B. Rowley of the ladies and hostesses committee, Professor F. B. Rowley of the reception committee, H. E. Garrish head of the entertainment committee, A. M. Wagner of the finance committee, A. J. Huch of the publicity committee and H. J. Sperzel of the golf committee were indefatigable in their efforts to make Minneapolis even more renowned as a city of hospitality.

Officers Nominated

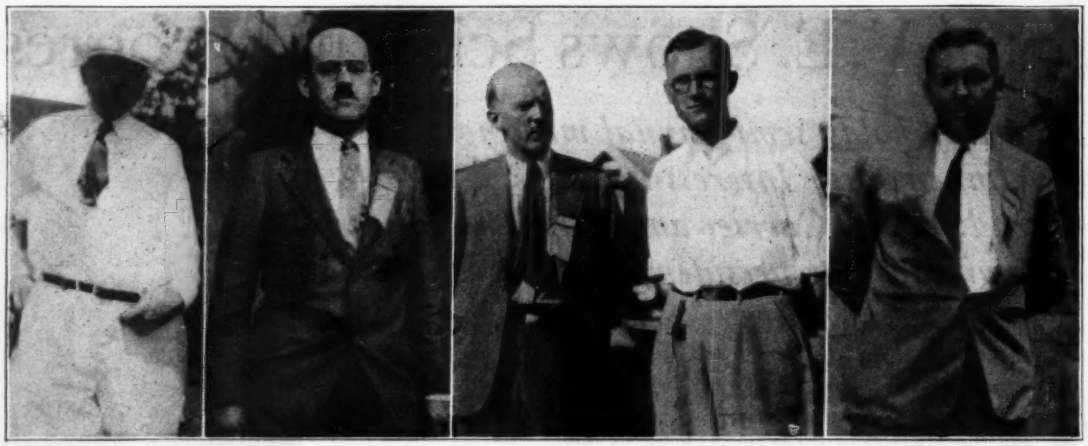
The officers nominated for the succeeding year were: President, W. H. Carrier, Carrier Engineering Corporation, Newark, New Jersey; first vice president, F. B. Rowley, head of the Technical Experiment Station, University of Minnesota; second vice president, W. T. Jones, Barnes & Jones, Incorporated, Jamaica Plains, Boston, Mass.; treasurer, Frederick D. Mensing, Mensing & Company, Philadelphia, Pa. The Council: Roswell Farnham, Buffalo Forge Company, Buffalo, N. Y.; E. H. Gurney, The Gurney Foundry Company Ltd., Toronto, Ontario; E. K. Campbell, E. K. Campbell Heating Company, Kansas City, Mo.; E. O. Eastwood, University of Washington, Seattle, Wash., and Davis S. Boyden, Edison Electric Illuminating Company, Boston, Mass., to serve the balance of the term of Alfred Kellogg who resigned.

Some Interesting Features of the Convention

Many of those in the Society who are leaders in scientific thought are reaching out for further knowledge into which frequently they have little insight and which at times seems just beyond their grasp. What, for instance, is meant by cold 70? Instances were cited of discomfort at 70 deg. Fahr. What should be the governing factor in heating, the requirements as recorded in the comfort chart or in the feelings of the occupant? What really is the temperature of air? Is it that which is determined by the sling psychrometer or is it something else? Do objects in a room transmit radiant energy which must be taken into consideration in heating but does not affect the usual instrument for measuring comfort? Can it be said that a person should be comfortable with a hot radiator on one side and a cold window on the other if the thermometer records 70 deg. Fahr.

These and similar questions were heard following the reading of the paper entitled "Wall Surface Temperatures" by that original thinker, Professor A. P. Kratz of the University of Illinois. This paper to a number was the high point of the convention. It will be considered in more detail in a later issue. Others received greatest benefit from a paper by F. A. Gunther on "Economic Use of Steam in Modern Buildings," and the matter of economic night temperatures was discussed not only at the sessions but also in the lobby of the hotel, on the sight-seeing trips and on the golf courses.

Consulting engineers, district heating engineers, maintenance engineers of large buildings and even the makers of temperature regulation devices themselves are divided in their opinions as to whether a certain temperature



Left to right: Thornton Lewis of Philadelphia; E. F. Jones, president of Minnesota chapter; D. M. Forfar, Grinnell Co., Minneapolis; V. L. Larson, Insulite Co., Minneapolis; A. J. Huch, Central Supply Co., Minneapolis

should be maintained at night under certain conditions in buildings in order to promote economy.

Economic Night Temperatures

To quote Mr. Gunther, "Rapid progress has been made and is being made toward the simplification and perfection of the modern steam heating system, and yet with all the available highly efficient apparatus, very little has been accomplished in the reduction of overheating of modern buildings. The desirability of elimination of any wasteful practice is, of course, admitted. From the standpoint of cost, the building owner is much interested and from the standpoint of conservation of mineral resources there is again much favorable argument. Also from the standpoint of health, anything that can be done toward increasing resistance to colds and other respiratory diseases should certainly receive consideration.

"The essentials for heating modern buildings must be kept clearly in mind before attempting to predict or state the magnitude of overheating of any building or group of buildings. Probably the three most important features of a satisfactory heating system are:

"1. Proper distribution of the sources of heat within the space to be heated.

"2. Sufficient and continuous supply of good air.

"3. Regulation of temperatures within the comfort zone.

"With these three essentials properly taken care of, much can be done toward properly and economically operating a heating system. The building operator must learn where the heat supplied to the building is consumed. He should be taught that any building is considerably like a sponge or sieve, soaking up heat and dissipating it through a myriad of heat leaks. Warm air is lost from the building through cracks around window sash and frames and through the walls themselves. Heat is conducted through the walls and glass and radiated from these wall and glass surfaces of the building. The chimney effect should be thoroughly explained to him, which should show him why more heat must be supplied to the lower floors of the tall building and less to the upper floors. In any existing building, very little can be done to reduce the conduction and radiation losses; but on the other hand, large losses due to excessive air change can be eliminated by proper caulking and weather-stripping of all openings.

Answer Becomes Tangible

"With this much of the problem realized, the answer becomes tangible. Assuming that the construction of any particular building is known and the defects kept in mind, it becomes necessary to next find out what consumption of fuel should be expected to properly and economically heat the building. Much argument has resulted concerning the basis of comparison of heating consumption. Some engineers insist on comparing consumption on the basis of pounds of steam per cubic foot of volume. Others insist that the proper comparison should be on the basis of pounds of steam per square foot of equivalent direct radiation. The latter, in the writer's opinion, is preferable, especially when one realizes that in buildings of today the radiation has been designed to carry a temperature of 70 degrees for a certain minimum outside temperature and wind condition, and that the calculations include the amount of heat necessary to take care of a specified number of air changes per hour. Therefore, when comparing heat consumption on the basis of pounds of steam per square foot of equivalent direct radiation, the figures include not only radiation and conduction losses from the building, but also take into consideration the net volume of the building for the purpose of air change.

"For many years, operators have been assuming that because any certain existing building consumes, for instance, 500 lb. of steam per square foot of equivalent

Interview with Professor F. E. Giesecke

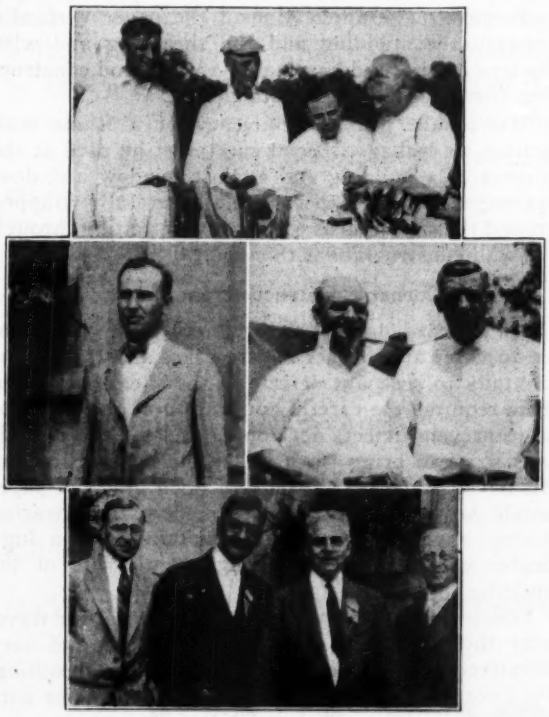
"The principal impression I received at the semi-annual convention of the American Society of Heating and Ventilating Engineers was the deep and sincere interest which the members exhibited in the scientific progress being made by the Society and especially in those broad fields of activity which affect the general health and well-being of the human race."

—College Station, Texas.

direct radiation that it is being heated properly, that there is not too much overheating and yet a figure as high as this may show as much as 50 per cent excessive consumption due entirely to this one cause. The figure may be entirely correct and basically economical for a warehouse, but for an office building with indirect or semi-indirect illumination and average occupancy, the heat from these two latter sources plus the other minor sources of heat in the building, exclusive of the heating system itself, this figure is usually nearly twice too high. When proper credit has been given for heat supplied by lights, occupants, domestic hot water systems, risers, and other miscellaneous minor sources of heat, this figure becomes less than 300 lb. per square foot per season. This does not mean that any building now using more than 500 lb. can be cut to 300 lb. and all parts of the building properly heated, because there are innumerable exceptions. On the other hand, the writer made a survey and analysis of over eighteen buildings in Pittsburgh which do not control the supply of steam with any extra intention toward economy and has found that the average amount of steam used by these buildings was 572 lb. per cubic foot per average season. Yet, a number of these buildings are now being heated for less than 350 lb. and heated quite satisfactorily.

Preliminary Tests to Be Made

"For the building operator to determine what the fuel or steam consumption for any existing building should be, it is necessary first to make a few simple tests. First, the cooling rate for the building should be determined by taking indoor temperatures over a period of time with no steam turned into the radiators of the building. This should be done for several out-door temperatures. These tests should be repeated at the same out-door temperatures with different wind velocities. Similar data should be taken to obtain the rate at which the building can be reheated after it has cooled. With these data available, it will be quite simple to plot curves between the coordinates of time and out-door temperature and correcting factors for wind velocity which will indicate at a glance at what time steam may be shut off a building in the evening and should be turned on in the morning. One or two readings taken at specified hours during the night will serve as a check on these curves and allow proper corrections to be made for excessive drops in indoor temperature due to any change in out-door weather conditions. In addition, accurate data can be taken on the amount of fuel necessary to maintain average indoor temperatures by following the indications given by the results of these tests. Considerable of the wastage of steam during the night hours when the building is not occupied can be eliminated in this manner. A large amount of discussion has prevailed as to whether or not it is practical to save fuel at night, but any one who has operated a building and made tests with and without shutting off steam during the night hours, knows that it is usually possible to save fuel by shutting off the supply of steam at night."



Top picture: W. H. Carrier, Newark, first vice president of the American Society of Heating and Ventilating Engineers; J. H. Kitchen, Kansas City, Mo.; J. C. Miles, Cleveland; J. B. Harris, Minneapolis. Middle row: A. Buenger, chairman of general arrangements committee; Norman W. Calvert, Klipfel Mfg. Co., Chicago; D. S. Boyden, Edison Electric Illuminating Co., Boston. Bottom row: A. V. Hutchinson, New York, secretary of the American Society of Heating and Ventilating Engineers; E. C. Evans, Los Angeles; E. K. Campbell, Kansas City, Mo.; John F. Hale, Chicago, Aerofin Corp.

In conclusion, it was pointed out that, "Most of us engineers have been guilty of installing radiation on courts and light-wells, assuming the same need for heat to be supplied to these locations as exists in the rooms with outside walls. Recent data show that the steam consumption of court radiation is approximately one-half that of outside radiation when calculated on the same basis. More information is needed to make a thorough determination along this line but certainly too much radiation has been used in the inside court rooms.

"Engineers have been accustomed to figuring indirect radiation equivalent to direct radiation in ratios of from two to one, to seven to one, and yet the steam consumption of indirect systems rarely shows more than an average of one and one-half to one.

"Looking back over the past 15 years, considerable progress has been made in designing more efficient and more satisfactory systems of heating and ventilating. The next 15 years will, no doubt, bring forth even more improvements, and the writer predicts that the heating system of the near future will be not only more efficient, but will give greater satisfaction, will be entirely pleasing to the eye—rather more of a decoration, easy to keep clean and completely and automatically controlled. Positive and forced ventilating will be included as being as necessary as the supply of heat and the air will be really conditioned instead of just strained."

Other Valuable Papers

Favorable comments were also heard on many of the other papers, particularly "Control of Gas Burning Heating Appliances," by W. E. Stark; "Surface Conductances as Affected by Air Velocity and Char-

acter of Surface," by F. B. Rowley and A. B. Algren; "How Comfort is Affected by Surface Temperatures and Installation," by Paul D. Close; "Capacity of Return Mains for Gravity and Vacuum Heating Systems," by F. C. Houghten and Carl Guthberlet; "Loss in Submerged Orifices," by Professor F. E. Giesecke; "Air Infiltration Through Various Types of Wood Frame Buildings Construction," by G. L. Larson, D. W. Nelson and C. Braatz; "The Application of Air Conditioning to Premature Nurseries in Hospitals," by C. P. Yaglou, Philip Drinker and K. D. Blackfan.

Interview with Edwin C. Evans

"The technical sessions were more than filled with papers covering a broad range of subjects, and the discussions on the part of members provide further proof of the value of research and our progress.

"Comparisons made with earlier conventions held in, say ten years B. R. (Before Research), when the thoughts expressed were more or less what individuals believed to be facts, although based only on their observations, show the entire trend to be centered on the very object of all effort, i. e., the human body and less and less on the physical apparatus which forms a system of heating and ventilation. These steps have been so gradual that perhaps we are not conscious of the progress we are making as individuals in the knowledge of the profession but, nevertheless, this marked difference is noted and credit is given by all to research. Another very marked point is that an ever enlarging number of members are no longer taking the human body for granted but are able to apply our comfort chart data and obtain results which justify their continued use."
—Los Angeles, Calif.

There were a number of reports of committees that were informative,—The report of the committee on oil burning by L. E. Seeley, chairman; on pipe sizes for heating systems by H. M. Hart, chairman; on garage ventilation by E. K. Campbell, chairman, and on air cleaning devices by O. W. Armspach, chairman.

Air Infiltration Through Various Types of Construction

Referring specifically to the paper on "Air Infiltration Through Various Types of Wood Frame Construction," information was presented which is of especial value to the heating contractor in aiding him to judge better the effect of building construction on heat losses when making such estimates. The conclusions, are given in the following:

"The air infiltration through a frame wall construction containing building paper or plaster properly applied is negligibly small.

"The best application of building paper consists of the clamping of the paper between two thicknesses such as sheathing and drop siding or shingles. In a single-surfaced wall, the paper may be effectively applied vertically on the studding under the boards. Special precautions are necessary at the corner of a building or against door or window openings to make the paper effective.

"While no difference has been found in the value of a high and a low grade paper on these infiltration tests, likely the good grade of paper will better maintain its efficiency against air infiltration over a period of years than will the poor grade of paper. A paper having considerable weight and strength should develop fewer defects in application than would a poor paper. The use of a poor grade of paper is particularly objectionable for a construction in which the paper is not firmly clamped between two thicknesses of material over its entire surface.

"End and side matched sheathing has a somewhat greater leakage to air than has side matched sheathing. The difference is of no importance when sheathing paper is included in the construction. End and side matched sheathing presents the same desirable flat surface for application of paper as does side matched sheathing. There is no disadvantage from the infiltration standpoint to offset the advantages of the use of end and side matched sheathing on the usual building construction. With end and side matched sheathing, random lengths may be used, resulting in a saving in material and labor.

"The application of building paper to single-surfaced frame walls such as are used for farm and other shelter buildings can be effectively and cheaply performed. The application of the paper vertically between the studding and the sheathing and with the laps on the studding makes a very good construction from the infiltration standpoint.

"To obtain the full efficiency of a frame wall against air leakage, special care must be used at the corners of a building and against window and door openings. Building paper should be carefully wrapped around the corner so as to prevent air getting through the wall construction at this point.

Corner Construction Important

"In the case of bevel siding, there is the chance for air to enter at a corner construction and travel horizontally to seek out defects in the sheathing paper. This requires the careful application of the paper so as to prevent defects developing and the use of wide laps so as to bring them under the contact lines of the bevel siding. The use of a good grade of paper would be economical due to freedom from tearing during application and the maintaining of a high degree of effectiveness throughout the life of the building.

"Drop siding does not present spaces for air travel over the surface of the sheathing paper and very effectively holds the paper against the sheathing. Poor corner construction is a less serious factor with drop siding than with bevel siding.

"The use of building paper is justified from an infiltration standpoint in any shingle roof or side wall construction. The use of shiplap rather than spaced boards is desirable in the clamping of the sheathing paper securely over its entire surface. This minimizes the buckling of the paper from ageing. In districts where heating seasons are mild, the inclu-

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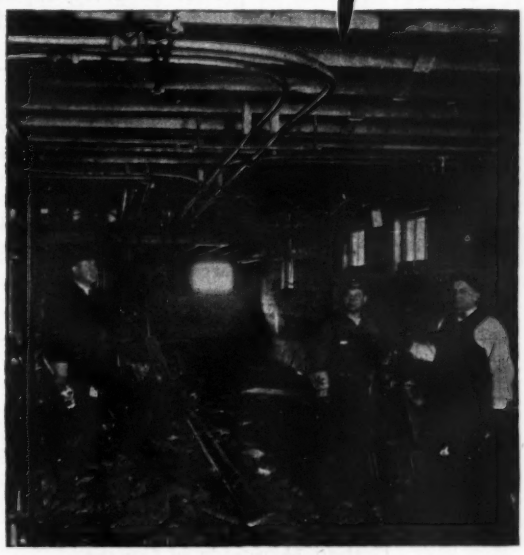

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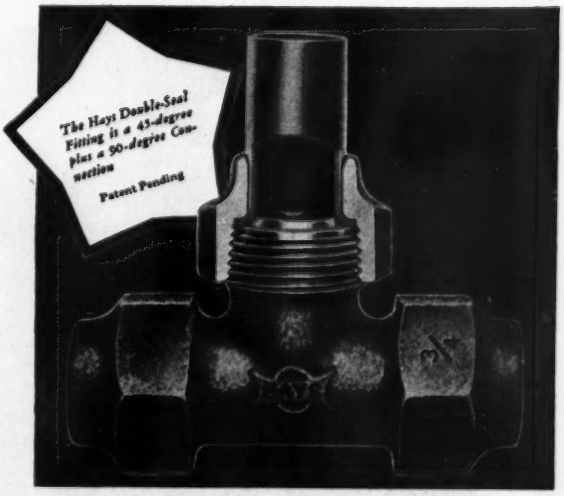

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sion of building paper and the use of shiplap rather than spaced boards would be justified by the reduction in infiltration.

"Plaster by itself allows the passage of only a negligible amount of air when properly applied. Proper application means the sealing at the baseboard and against window and door openings by running the plaster tightly against the floor or frame construction of an opening. The full effectiveness of plaster is probably seldom obtained. The development of cracks reduces the efficiency of the plaster. The application of paint or wall paper is not justified from the standpoint of infiltration reduction on a plaster wall that is fully effective, but on a cracked plaster surface the application of either paint or paper may reduce infiltration considerably.

"The effectiveness of plaster properly applied is no justification for the use of low grade building paper or of the poor construction of the wall containing it. Not only is it difficult to secure and maintain the full effectiveness of the plaster but also it is highly desirable to have two points of high resistance to air flow with an air space between them to keep heat transmission losses at a minimum."

Interview with John F. Hale

"I have never attended a convention at which more cordiality was manifested. It was more like a gathering of a large family than like the gathering of engineers from various parts of the world. The local committee is to be congratulated on the spirit of hospitality as well as the careful working out of the details of the arrangements."
—Chicago.

Carbon Monoxide in Garages

Concerning the paper entitled "Carbon Monoxide Concentration in Garages," the report covered one phase of an extended investigation of the subject of carbon monoxide concentration in garages and it is proposed to carry on other phases later in a colder climate than St. Louis. The original purpose of the investigation was to discover what relation, if any, exists between the concentration of carbon monoxide, gasoline vapors, and other noxious gases in any part of a garage, and those structural features of the building which may have a bearing upon these data. It was stated that "The data presented in the report are not sufficiently extensive to justify final conclusions."

Golf was the order of every day for the majority of the members and guests, the tournament on June 25 for the Research Cup and the kickers' handicap on June 26 being the two outstanding events.

The Research Cup tournament was held at the Automobile Club, and F. A. Kitchen of Kansas City proved to be the best shooter of the day, the cup being awarded to him at the banquet on the following evening. Following Kitchen for prizes, in the order named, were W. J. Mauer, Chicago, C. W. Presdee, New York, C. V. Haynes, Philadelphia, John Howatt, Chicago, R. E. Moore, Chicago, and Willis H. Carrier, Newark, N. J.

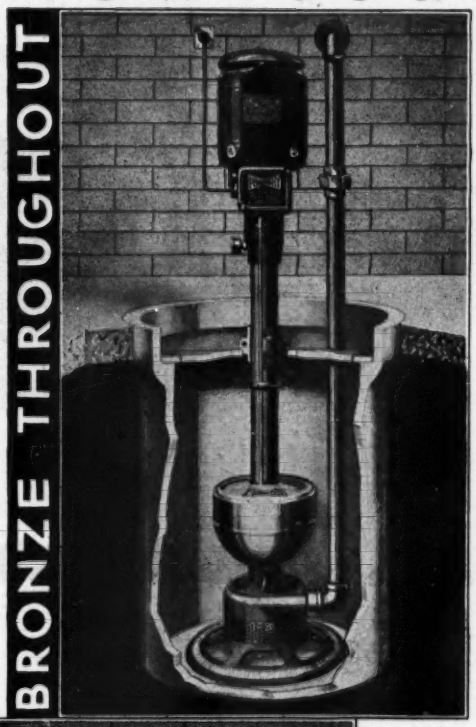
The ladies, too, shot golf on this tournament day, with Mrs. D. E. French, Philadelphia, and Mrs. Fred Shernbeck, Minneapolis, being the prize winners in the order named.

The kickers' handicap, on June 26, was at Minnetonka Country Club. Prize winners at this tournament were R. F. Connell, Detroit, Mich., L. J. Pitcher, Chicago, A. M. Wagner, Minneapolis, D. S. Boyden, Boston, and M. H. Bjerken, Minneapolis.

The various prizes were presented at the banquet on the evening of the 26th. Dean Anderson presided as toastmaster at this banquet and, before the regular prizes were distributed, referred to the perennial match between Willis H. Carrier and C. V. Haynes as a golf event which exceeds in importance any golfing tournament known to the game. He then presented Mr. Haynes with a special trophy in honor of his victory over Mr. Carrier.

Photograph taken at the recent quarter-centennial celebration of the Illinois State Geological Survey and of the founding of the engineering experiment station at the University of Illinois

A few reasons why— Plumbing Contractors install..



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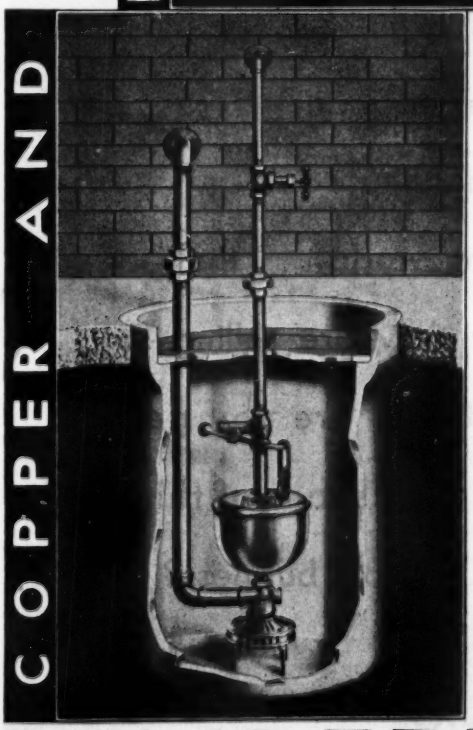

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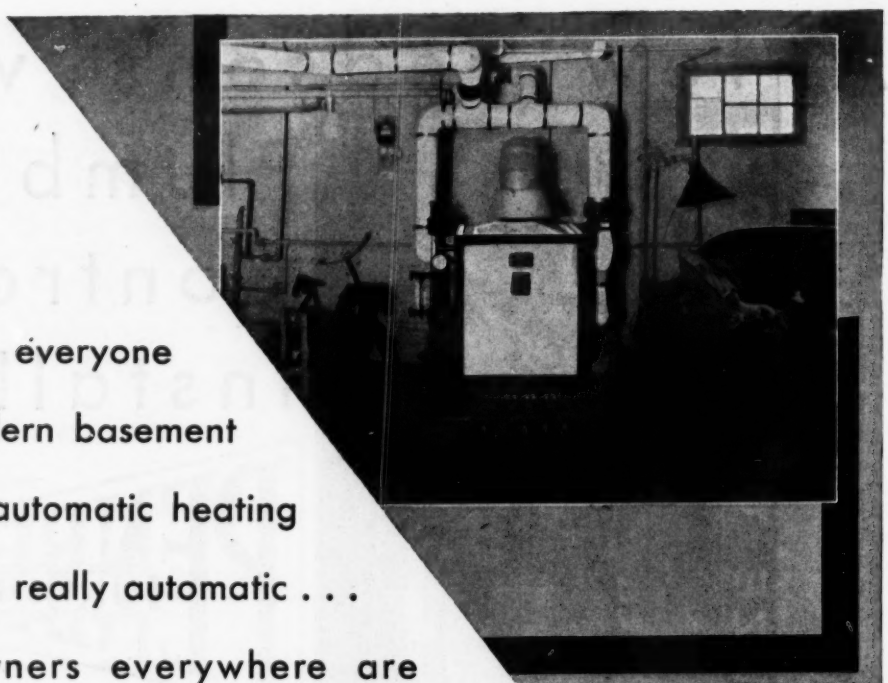

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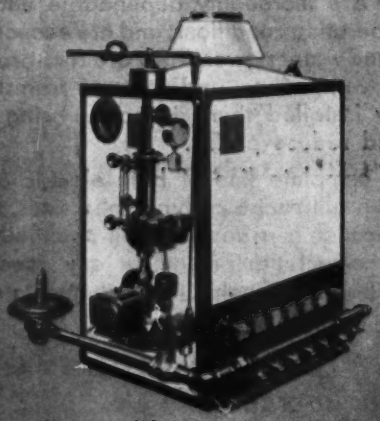

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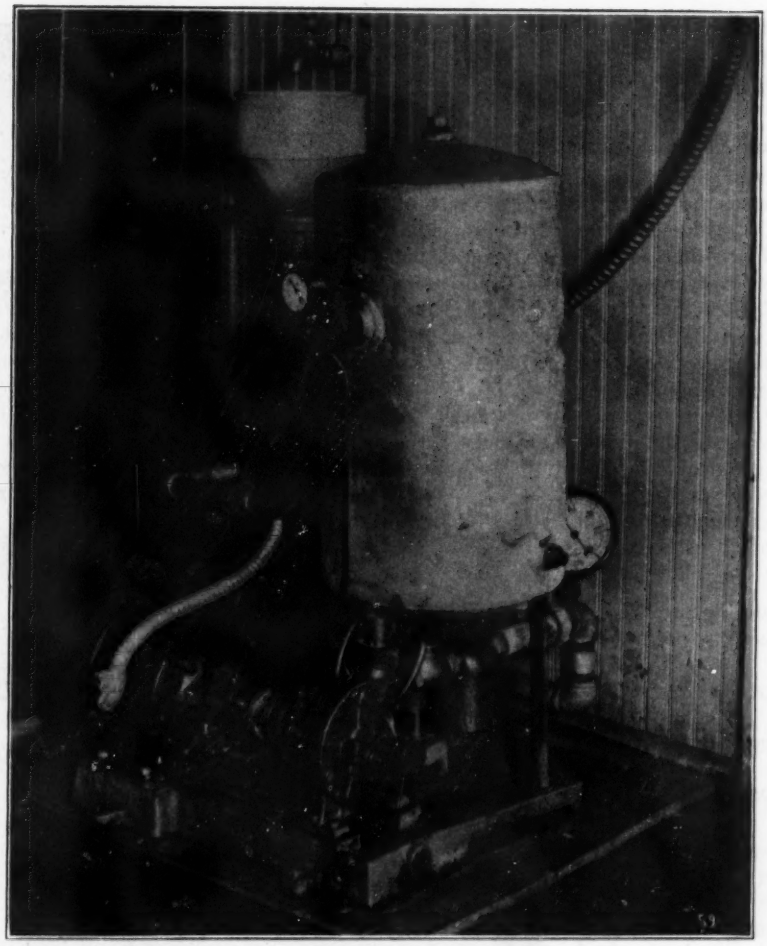


Fig. 1—The motors used for operation of pumps on residence water systems are usually single-phase 110-120 volt motors by reason of their operation from the house lighting circuit

What You Should Know *About* Electric Water Supply Systems

By G. C. BLALOCK

WITH the rapid progress now being made in the electrification of rural districts over the country, the farm, summer cottage, clubhouse or country estate without a pressure water system should soon become a rarity. Such systems may be installed at reasonable expense to operate entirely automatically at a surprisingly low operating cost for electric current, repairs, etc. And besides the convenience of such installations for household purposes—permitting the installation and use of standard bathroom equipment as well as relieving the housewife of the burden of pumping and carrying water—the system may easily be extended to include automatic watering fixtures for stock, sprinkling of lawns and gardens and a measure of fire protection which has heretofore been denied the isolated home. Thus the possession and use of an abundant water supply adds greatly to the health, happiness and safety of every member of the household.

There are two general types of pumping systems, those adapted to cisterns or shallow wells and those adapted to deep wells. The first type has the pumping mechanism entirely above ground and depends for its action upon the creation of a partial vacuum in the pipe which extends from the pump cylinder to the water, thus causing the water to rise in the pipe by reason of the atmospheric pressure upon the surface of the water below; while the second type has the pumping cylinder located in the well either beneath the water level or sufficiently near it that atmospheric pressure will raise the water to the cylinder as in the first type. Either system may be

had in a number of capacities, but the deep well system is naturally limited by the diameter of the well and its ability to supply the demand without excessive "drawdown."

Estimating Water Requirements

In planning a water supply system it is important that careful estimates be made of the amount of water required, taking due account of the capacity of the supply well or other source. In general, because of the greater convenience, considerably more water will be used after the system is installed than before, particularly if bathroom facilities are provided. For domestic service, not including lawn sprinkling or watering of stock, it is advisable to provide for 25 to 50 gallons per person per day, the larger figure applying to the small family since the per capita consumption of a large group is likely to be less than that of a small group.

Estimates of water requirements for other purposes than household uses may be based upon the following:

a.—For stock watering provide
7 to 10 gals. per day per head of horses.
7 to 12 gals. per day per head of cattle.
2 to 3 gals. per day per head of hogs.
1 to 2 gals. per day per head of sheep.

b.—For sprinkling purposes, a ¾-inch hose requires about 6 gals. per min. with a solid stream and 4 gals. per min. with a spray. To thoroughly wet down a lawn requires 25 to 40 gals. of water per 100 sq. ft. of surface.

c.—For fire protection the small system of the type under consideration is of value only as a convenient means of obtaining water for the extinguishing of fires in the incipient stage, for wetting down adjacent buildings, etc. For really effective fire fighting much larger systems are required.

For selection of a pump an estimate should be made of the maximum amount of water required for one hour. For small homes a system of 200 to 250 gals. per hour is usually sufficient. The average home with several persons in the family with lawn sprinkling, etc., to be included should have a system capacity of 250 to 500 gals. per hour, while the large residence, farm home or public institution should be provided with a capacity of 500 to 1,000 gals. per hour. The amount of storage which should be furnished depends upon local conditions and requirements, but in general the desirable storage capacity increases about in proportion to the pumping capacity. Soft water systems may usually be fairly low in capacity—say 125 to 200 gals. per hour.

Direct Pressure and Storage Tank Systems

Direct pressure systems employ no storage—or at most a very small amount—but depend upon operation of the pump whenever water is required. The advantages claimed for such systems are lower investment required, less space occupied and fresher water supplied. As contrasted with these, however, should be noted the fact that trouble with the pump or motor means an immediate stoppage of the water supply and also that the rate at which water can be drawn is at all times limited to the capacity of the pump. In general, therefore, a larger pump and motor should be supplied for a system of this kind than for one having considerable storage capacity.

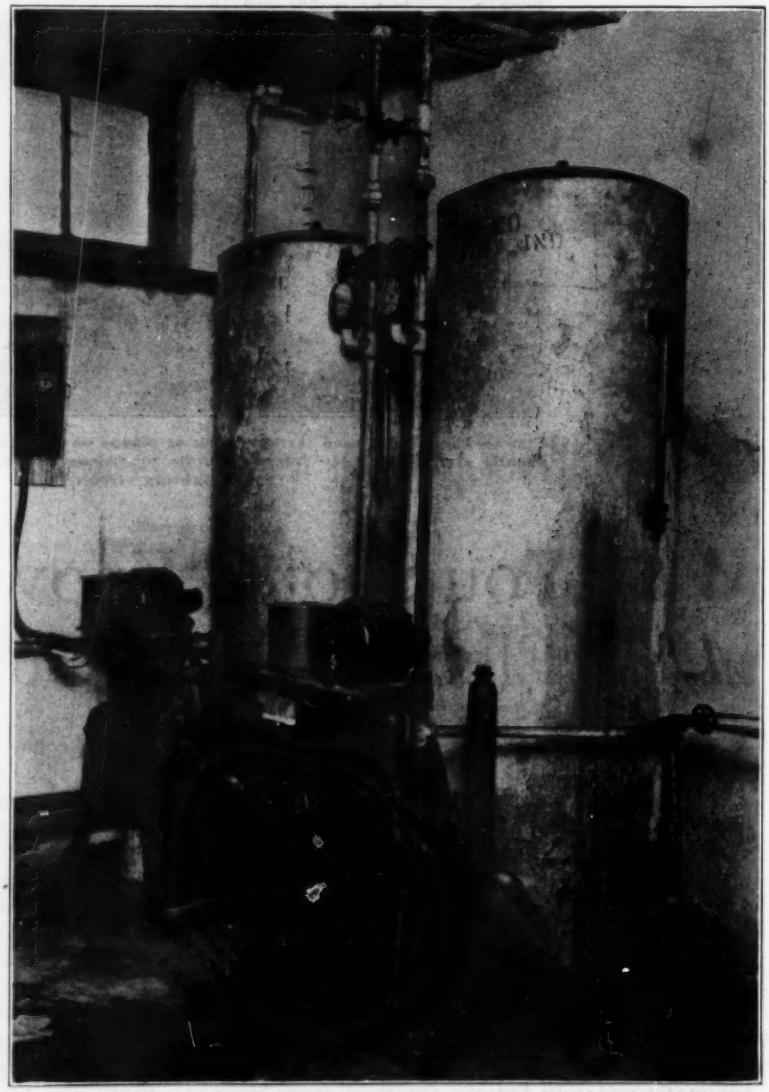
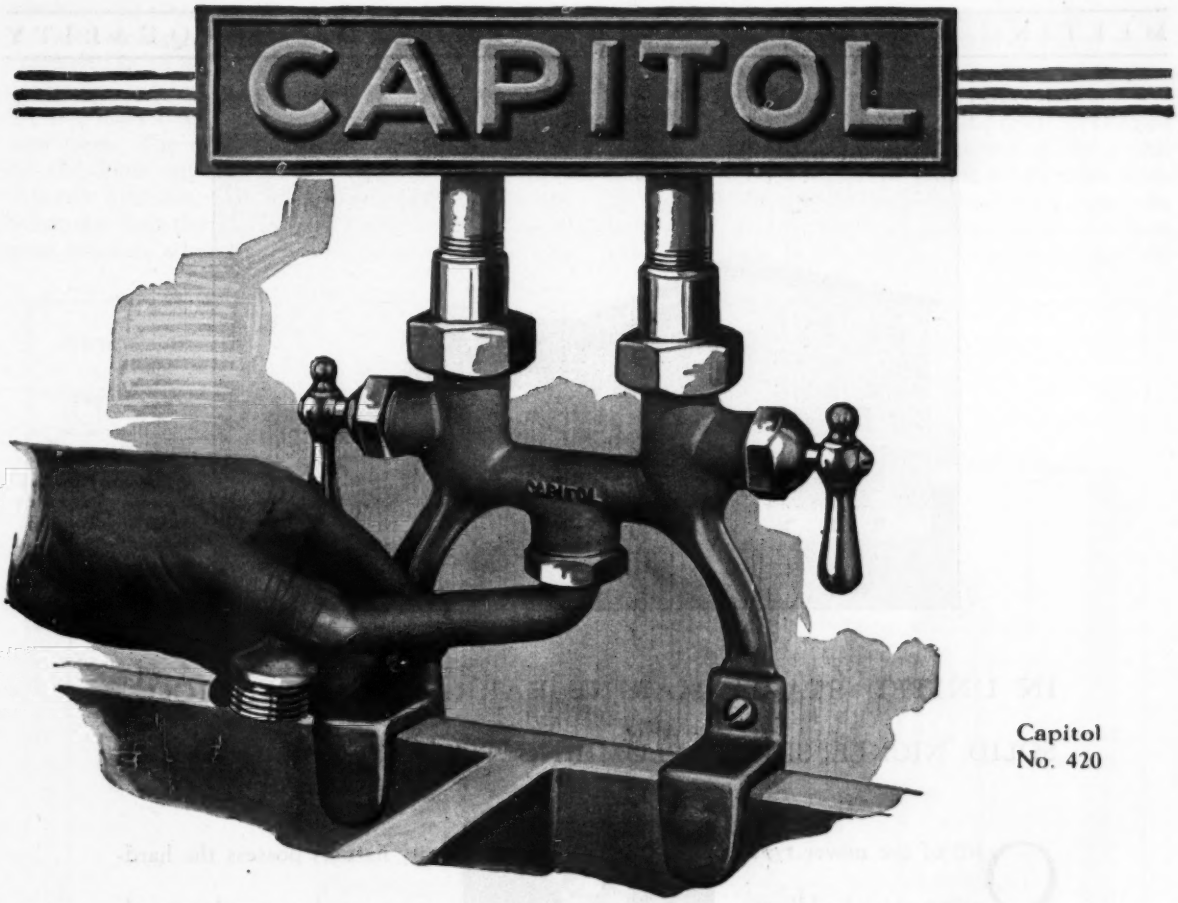


Fig. 2—Normally, with the pneumatic pressure system the tank should be only one-half to two-thirds filled with water, the remaining volume being occupied by air under pressure



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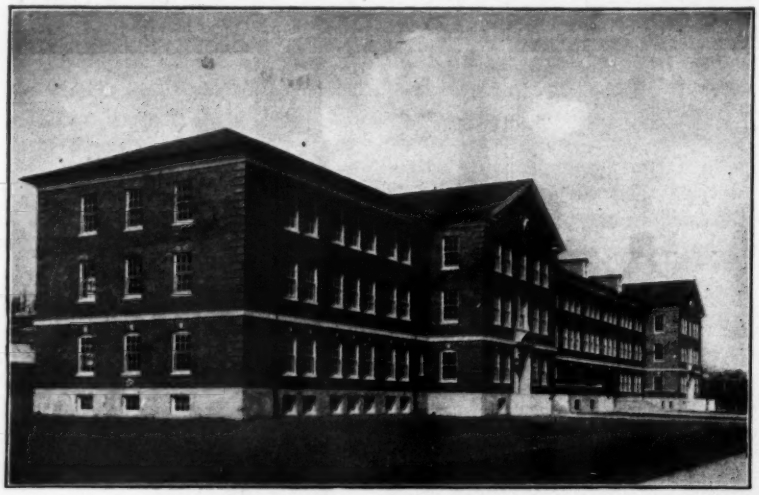

U.S. Marine Barracks, Quantico, Va. Solid Nickel Silver Plumbing fixtures by The John Douglas Co., Cincinnati, Ohio.

IN UNITED STATES MARINE BARRACKS, QUANTICO... SOLID NICKEL SILVER PLUMBING FIXTURES BY DOUGLAS

ONE of the newer type government buildings, the United States Marine Barracks at Quantico, Virginia, is designed to meet exacting standards of permanence and serviceability. It is significant, therefore, that Solid Nickel Silver plumbing fixtures are used throughout. Under hard usage, Solid Nickel Silver fixtures retain their bright, attractive appearance with a minimum of attention. These quality fixtures possess the hardness, toughness and strength usually associated with tough bronze. Solid Nickel Silver gives superior wear-resistance to valve seats and, being solid white metal, is not easily marred during installation or use. Solid Nickel Silver fixtures are quickly cleaned to a beautiful lustre. For beauty, durability and lasting satisfaction, specify Solid Nickel Silver sanitary equipment.

18% 22 Nickel SILVER

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Fresh water attachments usually can be secured for use with storage systems by which water direct from the well can be secured when desired.

Storage systems may be divided into two types, the overhead tank type and the pneumatic pressure tank type. The overhead tank system is familiar to all and finds application for both small and large capacity systems. Its chief advantage lies in the assurance that the stored water will be available at good pressure when required regardless of what may happen to the pump or electric power supply. Because of the necessary supporting tower, however, they are more expensive than the pneumatic system, whose tank may be set upon a basement floor or buried in the ground outside.

The pneumatic pressure tank system depends for its operation upon the expansive force of air imprisoned in the upper portion of the tank. The tank may be designed for either vertical or horizontal support, with the inlet and outlet connections near the bottom. Water is pumped into the tank against the diminishing volume and increasing pressure of the air imprisoned above until the desired maximum pressure is reached. Then with the opening of valves in the outlet line the air expands and, with gradually diminishing pressure, forces out the water.

From the standpoint of storage the working capacity of the tank used with the pneumatic system is much less than its actual capacity. For instance, a 180-gal. tank stores only about 120 gals. of water, the remaining space being occupied by air. With an upper working pressure of 50 lb. per sq. in. only about 50 gals. of water may be drawn from the tank before the pressure has been reduced to 20 lb. per sq. in., which is about the lower limit of useful working pressures. Thus the tank has for storage purposes a capacity of only about 50 gals. instead of the 180 gals. at which it is listed. Aside from its relative cheapness the problem of protection of the pneumatic system tank from freezing is much more readily handled than with the overhead tank since the former may conveniently be located below the frost line—sometimes in a basement, occasionally entirely buried in the ground or, more frequently, partially buried with only the head projecting into the basement or subsurface pit in which the pump is located.

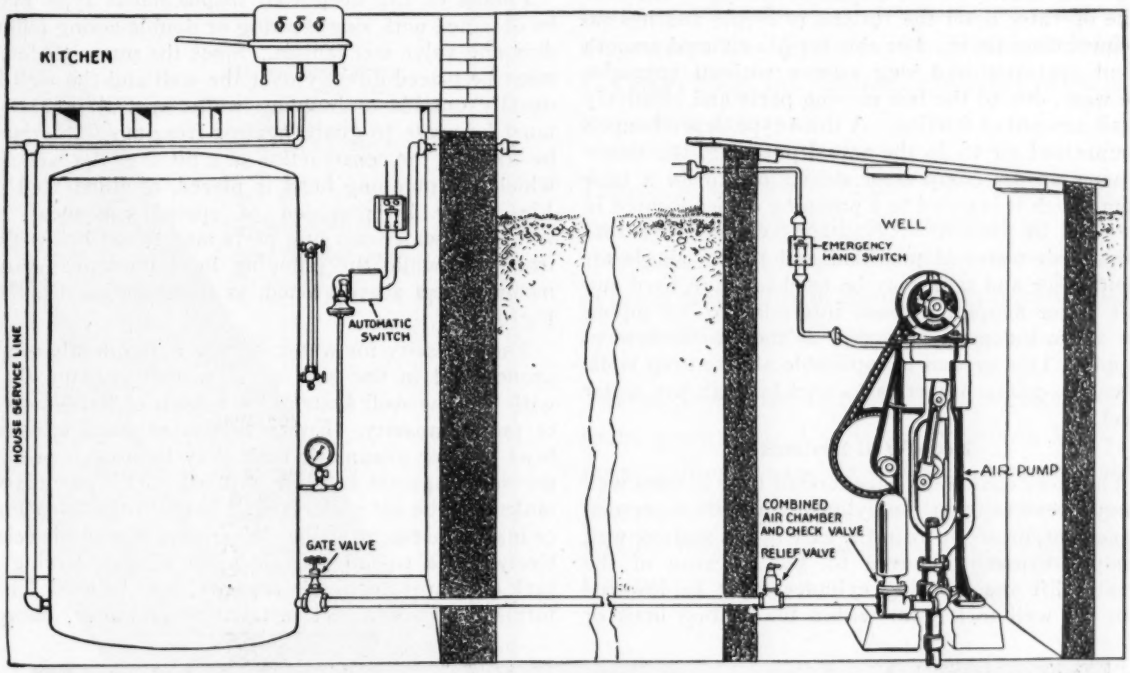

Fig. 3—In deep well pumping, since the pumping head must be placed directly over the well and the well usually is outside of building walls, special provisions must be made to guard against freezing. Typical provisions are illustrated in the above

Shallow Well Systems

The practical suction lift for pumps of the shallow well type is limited, at sea level, to about 25 ft. and decreases with elevations appreciably above sea level. The working level of the water should, therefore, be fairly accurately known if this type of pump is being considered. It is not always sufficient to know the static level since in most wells the water level drops appreciably while the pump is in operation. The amount of this "drawdown" may be such as to preclude the use of a pump of the shallow well type. For cisterns or other reservoirs the lowest water level at which the pump is to operate should be the governing factor. In general the suction lift should be kept as low as possible and the suction pipe laid as directly as possible between the pump and the water source since friction in the pipe, as well as back pressure of the foot-valve usually placed at the lower end of the suction pipe, has the effect of increasing

the suction lift. The less the suction lift the less the likelihood of trouble due to loss of priming by the pump.

An advantage of the shallow well system lies in the fact that it need not be placed directly over the water source but may be placed to one side, as in a basement when the source is outside the house.

There are several types of pumps designed for shallow well pumping, the more frequently encountered one being the ordinary cylinder and piston type —known usually as the displacement type. Another type operates upon the turbine principle and has no reciprocating parts. For this type is claimed smooth silent operation and long service without appreciable wear, due to the few moving parts and relatively small amount of friction. A third type depends upon compressed air to do the actual pumping, the motor driving an air compressor delivering air to a tank from which it is piped to a pumping device located in the well or cistern. Advantages claimed are that only fresh water is provided and that a single air compressor and tank may be used for both hard and soft water supply, without intermixture, by piping the air to independent pumps at the two sources of supply. This system is applicable also to deep wells since the pump proper is located beneath the water level.

Deep Well Systems

The more commonly encountered type of deep well pump operates upon the cylinder and piston, or displacement, principle as in the case of the shallow well pump previously referred to, but, because of the greater lift the working cylinder must be lowered into the well to a point within the suction limit or to submergence beneath the water. This necessitates the placement of a pumping head directly over the well to convert the rotary motion of the driving motor to the reciprocating motion of the piston, and a sucker rod for connecting the pumping head with the piston below. Necessarily, for successful operation the well hole must be reasonably straight. The sucker rod is usually arranged to operate inside the delivery pipe which connects the pump cylinder in the well to the tank or reservoir above ground.

Pumps of the deep well displacement type may be obtained with single-acting or double-acting cylinders and valve mechanism. Since the pumping head must be placed directly over the well and the well is usually outside of building walls, special provision must be made to guard against freezing. This may be done by the construction of a pit over the well, in which the pumping head is placed, as illustrated in Fig. 3, or by provision of special equipment by which the water carrying parts may be set below the frost line while the pumping head mechanism and motor is kept above ground, as illustrated in detail in Fig. 6.

The necessity for water storage is frequently more pronounced in the case of deep well systems than with shallow well systems by reason of limited well or pump capacity. Either system of storage, overhead tank or pneumatic tank, may be used if proper provision against freezing is used. The pneumatic tanks may be set underground beneath the frost line or inside basement walls. Where the demand is relatively low a so-called fresh water system, having a tank of almost negligible capacity, may be used. This forms a very compact installation of motor, pump-

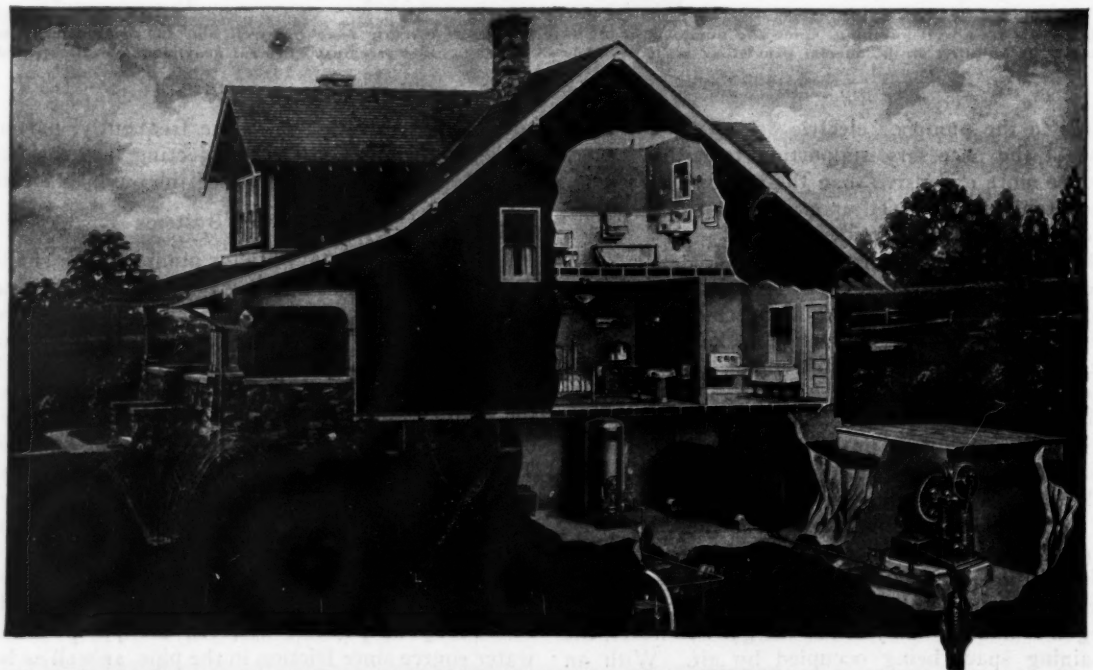

Fig. 4—In planning a water supply system, it is important that careful estimates be made of the amount of water required, taking due account of the capacity of the supply well or other source. For selection of a pump, an estimate should be made of the maximum amount of water required for one hour

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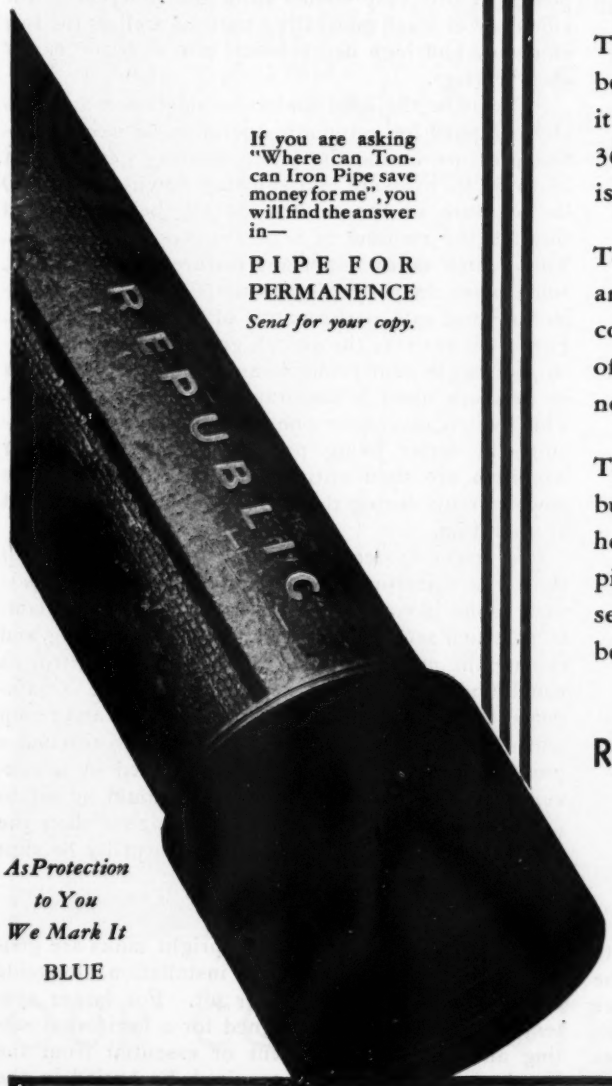
IS A WISE SELECTION FOR ANY BUILDING » » » »

And all the arguments in its favor boil down to these three words—It lasts longer.

True—it looks like many other makes of pipe—it bends and threads like the best of them—but when it comes to life in service, where the yardstick is 365 days long, the difference in favor of Toncan is much in evidence.

Toncan is an alloy of highly refined iron, copper and molybdenum with the qualities of rust and corrosion resistance processed into every tiny grain of metal, and uniform throughout the entire thickness of the pipe wall.

Toncan Iron Pipe is made to last longer and to build good will. Use it for plumbing lines, for heating lines, for any class of service where welded pipe is ordinarily used and the more severe the service, the more economical the use of Toncan becomes.



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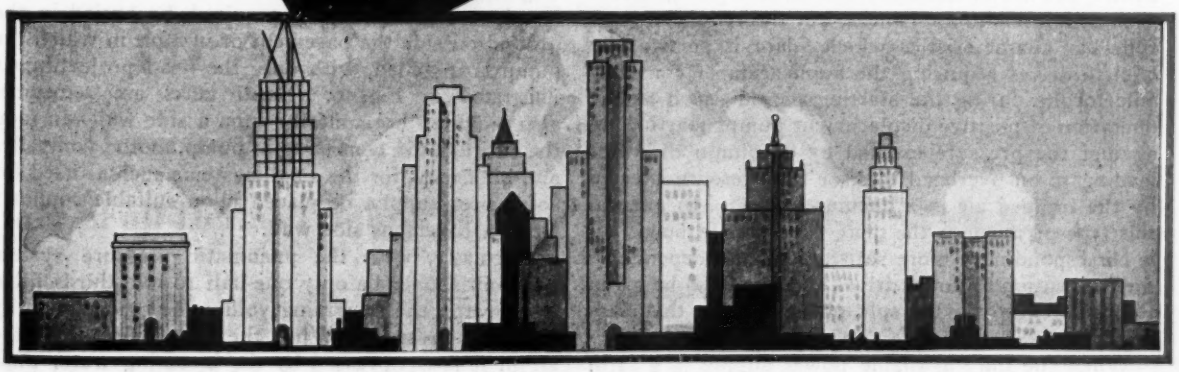

ing head and ballast tank and insures fresh water at all times.

Electric Motors

The motors used for operation of pumps on residence water systems are usually single-phase 110-120 volt motors by reason of their operation from the house lighting circuit, except in cases where the power is supplied from a farm lighting system. Single-phase motors are not the most rugged type of motor by reason of the necessity for building into them an auxiliary device for rendering them self-starting. This device may take one of several forms, but is ordinarily such that the motor is classed either as a split-phase or repulsion-start motor. The split-phase type starts through the action of an auxiliary winding which is thrown out of circuit by the automatic opening of a switch as the motor comes up to speed. The repulsion-start type starts through the medium of a commutator and brushes which are thrown out of circuit as the motor comes up to speed. Both types are in extensive use for low power drives such as household appliances, but the repulsion-start type has characteristics which adapt it particularly well to drives requiring the application of considerable torque during the starting period—such as the operation of positive displacement pumps starting up against the pressure exerted by a column of water leading to an overhead tank or the pressure exerted by the trapped air in a pneumatic tank. In general this type of motor is the more expensive to build, but is correspondingly more satisfactory and dependable for application to pump drives and may well be given the preference over the split-phase type for this class of service.

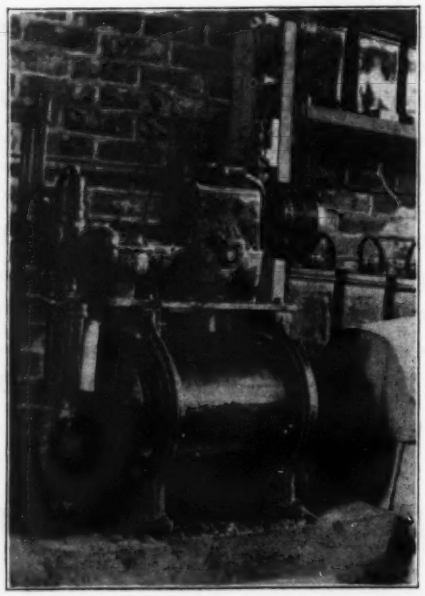

Fig. 5—A water-logged condition of the tank causes the pump to operate too frequently and in extreme cases, operation occurs each time the faucet is opened

When the only available power supply is a farm lighting system a direct current, compound wound motor would be the logical choice of driving motor. A water system operated from a farm lighting system, however, while convenient, is likely to prove relatively much more expensive than pumping with power applied direct from a gasoline engine, and in general it would be preferable to use the engine drive. The greater expense of using the electric power in this case comes from the inherently low efficiency of small generating units as well as the low efficiency and high depreciation rate of batteries for such services.

Systems of the kind under consideration are usually equipped for automatic operation between specified pressure limits, the pump starting generally at 25 to 30 lb. pressure and shutting down at 40 to 50 lb. pressure in the tank; control being effected through the medium of a pressure operated switch. This switch is an important feature of the system, since upon its perfect operation depends the satisfactory and safe performance of the entire system. For small systems the switch generally operates upon the toggle-joint principle as a result of variations in pressure upon a diaphragm of rubber or metal. This switch may open one or both sides of the circuit—the latter being preferable since the motor windings are then entirely disconnected from the power circuit during the period that the pump is not in operation.

For larger systems the same diaphragm type of switch is sometimes used, but frequently the pressure gauge is equipped with adjustable electric contacts which serve to energize relays for opening and closing the motor switch. Both types of control as usually made are quite dependable, but as a safeguard against failure to shut off the motor and pump when the upper limit of pressure has been reached a pressure relief valve should be installed at a convenient point in the system. This should be set to operate at a pressure 15 to 20 lb. higher than the pressure at which the pump would normally be shut down.

Tanks

For use with small systems upright tanks are generally furnished, designed for installation alongside the pump in the basement or pit. For larger systems the tank may be designed for a horizontal setting and may, if convenient or essential from the standpoint of floor space required, be buried in the ground outside the basement or in a pit in which the pump is installed, with only the head projecting as illustrated in Fig. 6. Small tanks are sometimes also mounted horizontally upon a side wall—in fact, the entire outfit, consisting of pump, motor, controller and tank may, for the small systems such as used for soft water supply, be placed upon suitable supports along a basement side wall.

Normally, with the pneumatic pressure system the tank should be only one-half to two-thirds filled with water, the remaining volume being occupied by air under pressure. When the tank is first filled the air in it is compressed by the incoming water until

OUR CONTRIBUTION TO THE ART OF HEATING AND VENTILATION

The Herman Nelson Wedge Core Radiator is an exclusive feature of all Herman Nelson Heating and Ventilating Products and accounts for their satisfactory performance. + + + +

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There are two ways to meet the large and growing demand for concealed heating. One is: to adapt any radiator to fit the problem at hand, in some haphazard manner. The other is: to supply a product specifically and scientifically designed for safe installation *within the wall.*

The success of the Herman Nelson Invisible Radiator is ample proof of the soundness of the latter method. Progressive heating contractors are finding it the means of getting profitable quality business.

The Herman Nelson Invisible Radiator comes enclosed in a specially designed steel cabinet which is easy to install in any four inch wall or partition. It is furnished either with or without removable front panel. It has no joints of any kind to fail and leak—no parts that can rust or get out of order. It eliminates "trouble jobs." Write for our engineering data book and full information. THE HERMAN NELSON CORPORATION,* Moline, Ill.

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*Makers of the *Herman Nelson Invisible Radiator*, for residences, apartments, hotels, offices and monumental structures—the *Univent*, for the ventilation of schools, offices, churches and all buildings having an acute ventilating problem—the *Herman Nelson hi-Jet Heater*, for economical distribution of heat in factories, mills, garages, warehouses, and smaller buildings.

the pressure has reached the desired value. The opening of a valve in the water line then allows this air to expand and force water out of the tank. As expansion takes place, however, the pressure drops and must be restored by pumping in more water. And since some of the air is absorbed by the water and lost, it is necessary that means be provided for replenishing the supply. Some systems are designed to allow a continual small intake of air with the water being pumped, others have convenient means available for replenishing it as needed. A glass water gauge or indicator of some variety is necessary in order that the user may know how high the water stands in the tank and when to replenish the air supply. Failure to keep an adequate supply of air in the tank will result in the tank becoming "water-logged," causing the pump to operate at more frequent intervals and, in effect, reducing the storage water available.

Installation

In planning the installation of a water system the first consideration is usually the elimination, or minimizing, of troubles due to low temperatures in the winter season. Next in order, consideration should be given the securing of a location for pump, tank, etc., which will be conveniently near the source of supply—for deep well outfits this location is more closely limited to the well itself than is the case with shallow well outfits—and not too far from the points of greatest demand, in order to minimize piping losses. Frequently all these considerations can best be met by locating the outfit in the basement of the residence; though at times it may be necessary because of scarcity of room to locate the tank in the ground outside the house. Small tanks, as previously noted, may be set upright upon the floor or may be mounted upon wall brackets. Large tanks are usually arranged for horizontal setting and are best mounted upon concrete piers. When placed in the ground outside the basement, care should be taken to see that a solid setting is secured in order to minimize the possibility of settling.

When necessary to locate the outfit outside the building walls a pit should be provided, properly lined and extending far enough above ground to avoid surface leakage and allow for air vents beneath the cover.

All piping should be galvanized and should be placed at least three feet below ground as insurance against freezing. It should be run as direct as possible and air pockets should be avoided in suction piping by giving it a slight upward slope from well to pump.

The most satisfactory operating condition for the shallow well system is obtained usually when the pump intake is slightly above the level of water in the well, cistern or tank. But it is sometimes necessary to locate the pump intake below the water level, which may result in noisy operation. A convenient remedy lies in the placing of a valve in the intake line, this being partially closed in order to provide suction on the pump intake during operation. If difficulty is experienced in keeping sufficient air in the pump chambers, and in the tank, a small standpipe should be installed between the pump and the valve in the intake. Then by occasionally throttling the intake sufficiently to cause air to be drawn in through the standpipe the air lost by absorption will be replaced and smooth operation of the pump assured. Extra air chambers may be desirable in long suction lines to provide a cushioning effect and promote smoothness of operation.

Foot-valves, for holding the suction line full of water during times that the pump is idle, are usually desirable for lifts exceeding 6 to 10 ft. In addition,

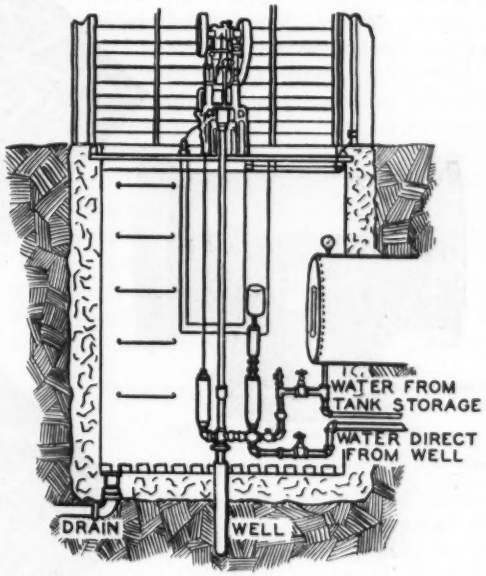
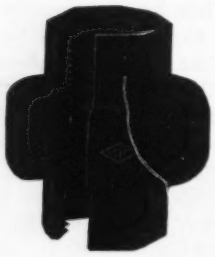


Fig. 6

to provide against loss by leakage, it is sometimes necessary to provide a by-pass of small pipe around the pump so that the suction pipe may be kept filled from the tank. Suction lifts should always be limited as much as possible, and never under any circumstances should exceed 25 ft. in regions near sea level. For higher elevations the practicable lift is reduced about 1½ ft. for each 1,000 ft. of elevation. While the shallow well type of pump may, in general, be located without particular reference to the water source, it should be remembered that extra piping between pump and water source adds to the suction lift, because of water friction in the piping, and increases the possibility of trouble due to leaks.

With deep well systems the location of the equipment is determined by the location of the well. From the standpoint of the equipment, therefore, the ideal arrangement would be to have the well brought up inside the basement. Next to this arrangement, which is not always feasible because of well drilling and cleaning difficulties, the well may be just outside the basement wall and have a pit connecting with the basement for convenience of access.

If use is made of the pneumatic system, however, as previously mentioned, the air pump, motor and tank may be placed in the basement or other con-



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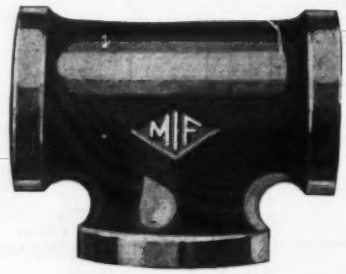
Branford Brass to Iron Seat Unions either in the Junior or Regular size, meet with standard specifications everywhere. They are sturdy and leakproof, easy to install and priced right. » »



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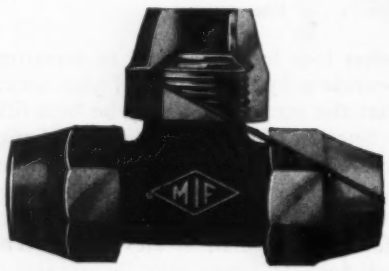
M. I. F. Fittings are made of the finest malleable iron. Rigid inspection makes them uniform in quality. Careful machining makes them faster to use. Nearly all jobbers carry them in stock. »



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The latest addition to the M. I. F. Line is the Copper Tube Fitting. Its Two Points of contact in the double 45° seat make it leak and shock proof. Made in all working sizes up to 2". »

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venient point and the air piped to the well. It is necessary, however, in order that the cost of pumping be kept to a reasonable figure, to use extreme care to get all joints in the air lines perfectly tight. Also the same precautions should be exercised to prevent freezing as in the case of water pipes, since moisture will collect at low points in the pipe in sufficient quantities to freeze and obstruct the passage if subjected to low temperatures.

Wiring

In wiring the motors to the house service the wiring should be of ample size to prevent excessive voltage drops as well as conforming to the Electric Code from the standpoint of current carrying capacity.

With 32 volt farm lighting outfits the current is proportionally higher than with the 110-volt lighting systems and the wire and fixtures must be proportionally larger. The motor circuit should be provided with a separate switch and fuses, conveniently located near the motor. The most frequent source of difficulty with motors lies in the application of voltages appreciably below normal, resulting in excessive heating of the windings and possible shut-downs due to interrupted circuits. If the motor appears to be heating abnormally the voltage, with the pump in operation, should be checked with a volt-meter, and if found to be at any time more than 10 per cent below normal the condition remedied by increasing the size of connecting wiring, shortening the length of connecting line, cutting off other loads while the pump is in operation or taking such other steps as an analysis of the trouble may indicate as a probable cause of the low voltage.

Motors should always be given adequate protection through the use of fuses of proper rating, and should, in general, be placed on circuits separate from those supplying the house lighting; that is, the motor circuits should start from the main entrance box and be used for no other purpose than to supply power to the motor. There may sometimes of necessity be exceptions to this rule, but as a general proposition more dependable operation of both motor and lights will result if it be followed.

Maintenance

When properly installed, water systems of the kind under consideration require comparatively little attention. They should, however, be kept free from dirt, dust or excessive moisture and be properly painted and oiled at reasonable intervals. The manufacturer's instructions as to lubrication form the best guide in this respect.

Piston rod packing, if properly installed, should not require replacing oftener than once a year. If too loose, water will leak past it, while, if too tight, the rod is likely to be scored and the motor may be overloaded due to the excessive friction. Normal wear may require occasional tightening to prevent leakage.

As previously mentioned, lack of sufficient air in the upper part of the tank will result in a water-logged condition, which causes the pump to operate too frequently, in extreme cases causing operation each time a faucet is opened. The remedy lies in readjustment of the air-intake valve to provide more air or in forcing air into the tank by auxiliary means at more frequent intervals.

If operated for long intervals without shut-down, the motors supplied with these outfits are likely to become overheated, since they are usually not designed for continuous operation. They should have free access to the air for cooling purposes and must never be covered in any way which will prevent free circulation of air around and through them. The bearings should be oiled or greased occasionally, and in the case of motors having brushes the copper commutator may need an occasional cleaning. This should be done with fine sandpaper, held against the commutator while the motor is running. Emery cloth should never be used for this purpose. Brushes should be renewed when badly worn down, the new ones being fitted to the commutator by sandpaper held on the commutator and rubbed back and forth underneath the brushes. The contact points on the automatic control switch should be inspected occasionally and readjusted or replaced if badly worn.

One Ton of Refrigeration

The removal of 200 B.tu per minute for 24 hours is equal to one ton of refrigeration. This is based on the latent heat of fusion of ice taken as 144 B.tu per pound or 288,000 B.tu per ton. The removal of 288,000 B.tu in 24 hours is equal to the removal of 200 B.tu per minute.

Problem 1: A refrigerator requires the removal of 51,000 B.tu per hour to maintain it at 20 F. How much refrigeration is needed?

Computation:

$$51{,}000 \div 60 = 850 \text{ B.tu per minute}$$

Since 200 B.tu per minute equals one ton of refrigeration, the required tonnage is $850 \div 200 = 4.25$ tons.

Problem 2: Ten tons of apples require the extraction of 900,000 B.tu in 12 hours. How much theoretical refrigeration is required?

$900{,}000 \div (12 \times 60) = 1{,}250$ B.tu to be removed per minute.

200 B.tu per minute equals one ton of refrigeration.

$1{,}250 \div 200 = 6.25$ tons of refrigeration required.

The heat content difference before entering and after leaving the evaporator or cooler, found by subtracting the heat content of one pound of refrigerant just before it passes through the expansion valve from the heat content just before it enters the compressor inlet valve, is known as the *refrigerating effect*.

All of the cooling ability of the refrigerating effect may not be utilized for effective refrigeration, since some of it is usually lost by radiation. Nevertheless, it is available if the necessary measures are taken to conserve it for the purpose produced.

RETAIL ADVERTISING SERVICE

These pages this week carry two single column newspaper ads, one two-column newspaper ad, the usual sales letter and two publicity items. Also included is the fourteenth of the "window-grams" with instructions for its use. The cuts for the single-column ads cost 35c each or $4.20 for twelve weeks' service.

Remove the Waiting Line at Your Bathroom Door

MORNING rush or evening rush —both are difficult times if you want to use the bath. And now summer is suddenly here, with the young folks rushing in from a swim or a tennis game for their showers, father home from a game of golf and the rest of the family all trying to get a turn at the one and only bath. Something should be done about it, and our suggestion is a shower stall. They are inexpensive, easily installed, and so small you can stick them almost anywhere. Absolutely waterproof, too, so there will be no ruined floors or ceilings. Don't try to get along without the extra shower any longer.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 90

KEEPING FIT

"In my opinion," remarked Harry Brown, local plumbing and heating contractor, "one of the greatest things our American interest in outdoor sports has done for us has been to make us shower conscious. No tennis or golf game, horseback ride or morning row on the lake is complete unless followed by a refreshing shower.

"It may seem like a small thing but I really believe our shower habit has had much to do with making our young people so fresh and wholesome and keeping the older ones so astonishingly fit, in spite of the fast pace they keep. No home or clubhouse could be truly American unless it was equipped with adequate shower facilities."

SALES LETTER

No. 40

HARRY BROWN

PLUMBING & HEATING

Two Rivers, N. Y.,
July 12, 1930

Mr. Edward Jones,
Two Rivers, N. Y.

Dear Sir:

I wonder if you realize with how little trouble and expense you can have an extra shower. You are probably already realizing how much in demand your one shower is going to be this summer, and wondering how on earth you are to get along without that extra bathroom. Now you can have the extra bath, simply by installing one of our new shower stalls, which take up so little space that you can put it anywhere you wish.

The shower stall is inexpensive, small, and so well made that you need never worry about any damage caused by leakage. It can be installed with very little time and trouble, in one or all of the bedrooms, or wherever it will be easily accessible. Here is a convenience you can no longer afford to be without, and now is the time to have it installed, in order to derive the fullest enjoyment and comfort from the summer months. See us today about plans and specifications.

Very truly yours,

HARRY BROWN

HERE are two newspaper publicity items—clip them and hand them to your local paper. They represent valuable sales help.

Radiator Heat is Sensible Heat

THE sensible method of heating a home is by radiator heat. It is so easy to forget the precious air that surrounds us, and we need to be reminded that it is being used every second by our bodies, not only through the lungs, but through the very pores of the skin. This air, to be healthful air, must contain a certain amount of moisture and we must be careful not to disturb nature's balance by incorrect heating methods. Radiator heat warms the air, removing none of its important elements, and a small but constant current from outside is all that is necessary to provide freshness. We have a radiator for every size and style of room.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 91

HOW TO PROTECT YOUR FAMILY'S HEALTH

"Everyone knows," said Harry Brown, local plumbing and heating contractor, "that air is about the most important thing in the world. The better the air, the more healthy we are. It would seem, then, that we should do everything possible to keep the air in our homes in the best condition for bodily consumption.

"Your doctor will tell you that the surest way to protect your family's health in winter, spring and fall, is to eliminate sudden changes of temperature in your home. He will tell you further that dry, overheated air is harmful and that radiators give the most comfortable and healthful heat for the home."

Practical Advertising Helps

An Extra Bath At Minimum Cost

If you have always wanted an extra bathroom but felt that you had neither the space nor the money for it, the new shower stall is a simple and inexpensive solution of your problem. It is easily installed, occupies very little space, and is absolutely waterproof so that you need not worry about wet floors or damaged ceilings. The average family never seems to have adequate bathing facilities, and if the family is large, or one that entertains a great deal, annoying and often embarrassing situations occur in the one-bathroom home. How greatly just an extra shower will ease the situation can be realized only with experience.

These shower stalls come in a wide variety of sizes, designs and colors. They are built solidly and are permanently leakproof. Here is an opportunity for you to have bath-for-each-room luxury and to give added delight to your family and comfort to your guests at a surprisingly low cost. If you will pay us a visit we will be glad to show you the various styles and sizes of the shower stalls.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 92

For those of our subscribers who want to use two-column or larger ads, either of the illustration cuts on the opposite page may be used, according to the lay-out at left.

ADVERTISING should be considered as a campaign — each piece of copy ought to fit into a progressive campaign. These pages, for instance, will help build brief efforts proper to the season just opening. Each piece of copy ought to be strengthened by others—as the sales letter helps the newspaper ad, and the publicity items help both.

How to handle the window display shown at right

A Window Display Suggestion—No. 14

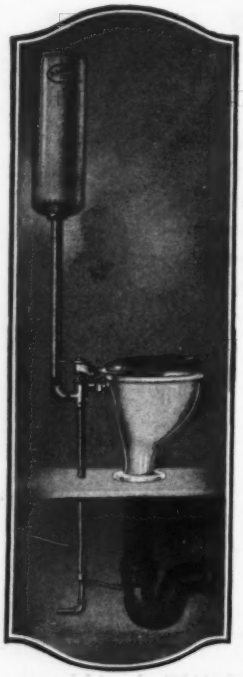
Take several dozen basin and bath stoppers and arrange them in the shape of a diamond, of whatever size the extra space in your window permits, and then encircle the diamond with a ring, or two rings, of additional stoppers. Place the show card nearby.

The copy for the card can be set up by your local printer, or you can have your local sign writer or show card writer letter it by hand for you. Whichever course you follow, be sure that your card is of first-class appearance. Don't try to do the thing cheaply.

A Reminder!

To take home that basin

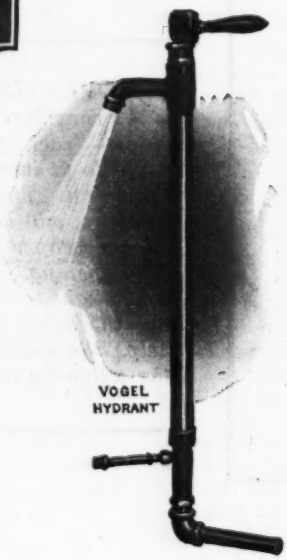
or bathtub stopper that you've been trying to remember



Number One Vogel Frost-Proof Closet.

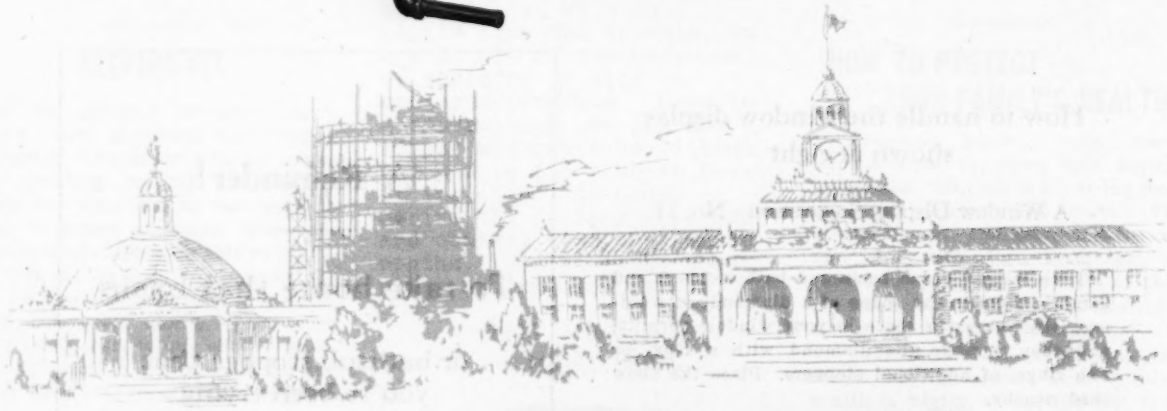
REGARDLESS OF BUSINESS CONDITIONS THERE ARE ALWAYS PLENTY OF JOBS AND PLENTY OF PROFITS TO BE MADE INSTALLING *VOGEL FROST-PROOF CLOSETS AND HYDRANTS AND VOGEL NUMBER TEN AND TEN-A CLOSETS* FOR SCHOOLS, FACTORIES, PLANTS AND INSTITUTIONS.

Your customers are always willing to pay for the convenience and trouble-free service Vogel Products give



Very often your customers do not realize the convenience of a **VOGEL** Frost-Proof Closet outside the house; in the garage, for instance, until you point it out to them. You can install this closet for them at a small cost, and it will last for years, without the need for repairs or attention.

And again, the **VOGEL** Frost-Proof Hydrant fills the need for a supply of water outside the house all the year 'round. It has the same valve as the **VOGEL** Frost-Proof Closet, so there is



See inside front page and inside back page for other **VOGEL** advertisements.

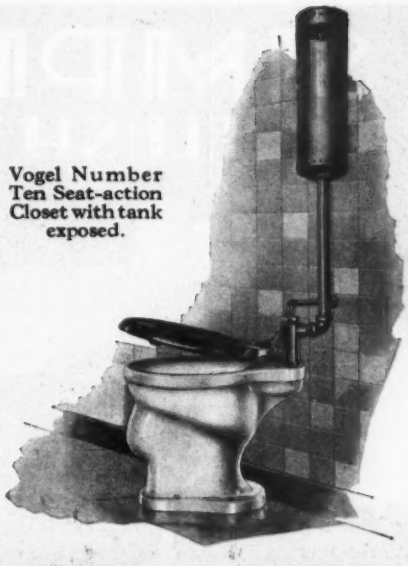
VOGEL
PATENTED

no danger of it ever freezing even in the coldest weather. It is a great convenience in the summer, and even greater in the winter, because it never requires attention. This is another way for you to make an extra installation, and an extra profit.

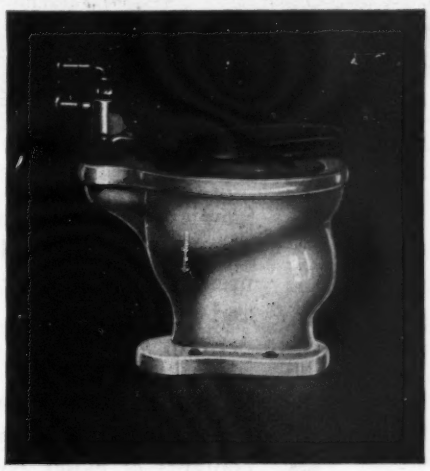
VOGEL Number Ten and Ten-A seat-action closets are designed especially for plants, factories, schools, institutions, comfort stations, waiting rooms, theatres, moving picture houses, and all public and semi-public places.

This market is tremendous, and is always active. In schools alone every year there are millions of dollars spent in new building and improvement work. Factory and plant owners are realizing every day that it pays to have efficient closets in their plants and ample facilities for their employees.

All this activity means new jobs and more profits for you. In our advertising, both publication and direct-by-mail, we are telling all your customers about **VOGEL** Products.



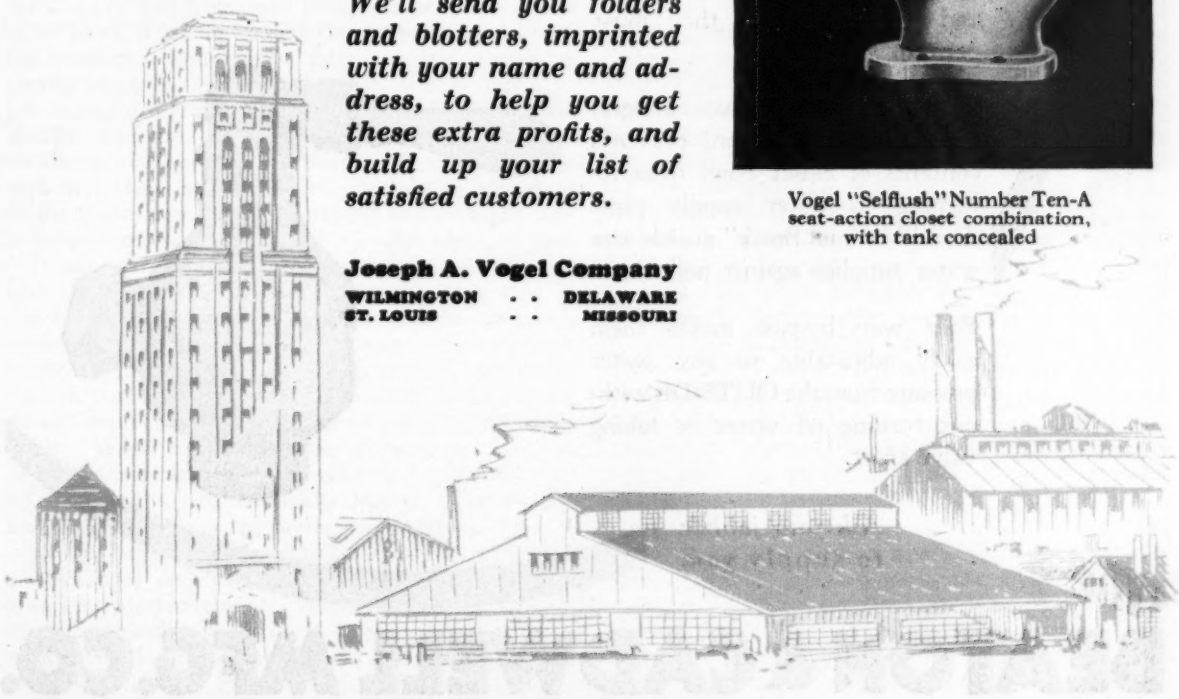
Vogel Number Ten Seat-action Closet with tank exposed.



Vogel "Selflush" Number Ten-A seat-action closet combination, with tank concealed

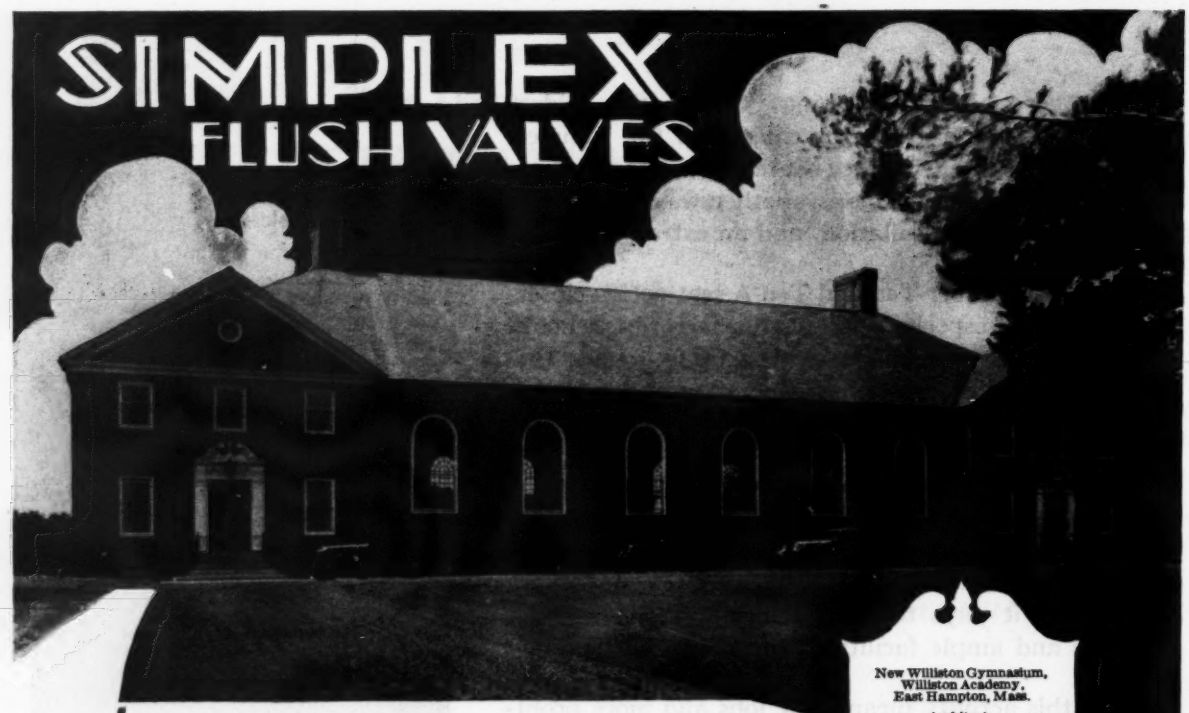
We'll send you folders and blotters, imprinted with your name and address, to help you get these extra profits, and build up your list of satisfied customers.

Joseph A. Vogel Company
WILMINGTON . . DELAWARE
ST. LOUIS . . MISSOURI



Frost-Proof Closets and Hydrants
Number Ten and Ten-A Closets

SIMPLEX FLUSH VALVES



New Williston Gymnasium,
Williston Academy,
East Hampton, Mass.

Architect:
James H. MacNaughton,
19 Arlington, Boston, Mass.

Jobbers:
Wm. H. Gallison Co.,
Boston, Mass.

Plumbing Contractor:
H. R. Davies,
Northampton, Mass.

Simplex Flush Valves take their place in the New Williston Gymnasium, prepared for the rough and strenuous duty they must perform.

In Simplex Flush Valves, integral air intake construction, prevents contents of closet bowl from returning to water supply pipe. This "Vacuum Break" guards safe water supplies against pollution.

Four way by-pass makes them easily adjustable to any water pressure from the OUTSIDE without turning off water or taking valve apart.

Ask your jobber to supply you.

The
BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

Tracing Heat in Boilers *and* How It Is Done

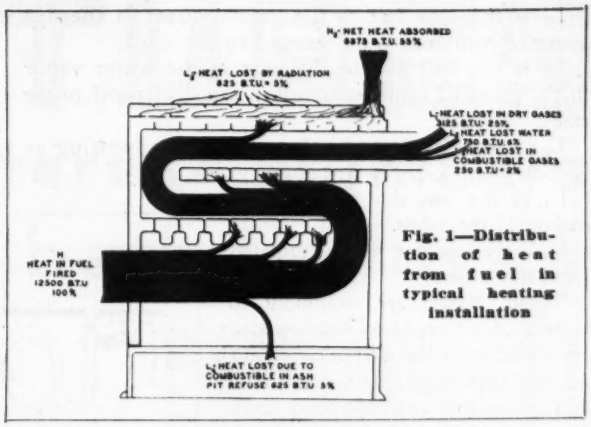


Fig. 1—Distribution of heat from fuel in typical heating installation

By B. J. CROSS

A STUDY of the statistics of coal consumption of the United States for the past fifteen years reveals the interesting fact that notwithstanding the tremendous increase in industrial products during this period, the consumption of coal has shown little if any increase. While this is due in part to the development of oil and gas as fuel, the chief reason is the increase in efficiency in the use of coal. The large consumers of coal, the railroads, public utilities, steel works, all have improved their efficiency in the utilization of coal and more ton miles, more electric energy, more steel is produced for a ton of coal consumed than ever before. On the other hand, it is shown that the consumption of coal for heating and domestic purposes has shown a steady increase, not only in total amount but also per capita. While this is due largely to the higher standards of comfort now existing, rather than a decrease in efficiency of combustion, it can be safely said that there has been little increase in efficiency in the use of coal for this purpose and certainly not in proportion to that obtained by other users of fuel.

It can hardly be hoped that there will be any material increase in efficiency in the use of coal in the heating of small houses. In such installations efficiency is sacrificed to convenience. The average house holder is satisfied to burn one or two more tons of coal during the heating season if he can be saved frequent trips to the basement to care for his boiler. While the substitution of oil or gas for coal in such installations may result in higher thermal efficiencies, the cost is usually higher. The reason for such changes is the added convenience.

In the larger heating installations, such as apartment houses and large buildings, there is greater promise of improvement. Where the size of a heating unit justifies a constant attendant the cost of added attention to its operation is nil and the benefits to be derived are great. There is also a greater choice in equipment for the moderate sized installations. The small automatic stoker which has been developed within the past five years represents a notable advance in the burning of coal under heating boilers.

Hot water systems find their chief use in the heating of homes. The large volume of water contained in such systems provides a large reservoir of heat and this feature offers some advantages. This system is also largely used in green house heating.

Steam heating has by far the widest application and covers the range from the small dwelling to the largest public buildings. The installation of steam heating systems is somewhat simpler than hot water systems and the response to demands of load is more rapid.

Determination of Efficiency of Heating Boiler

The determination of the efficiency of heating boilers presents a peculiar difficulty. The usual method for determining the efficiency of a boiler entails the division of the energy input represented by the weight of fuel fired times its heating value by the energy absorbed. While in house heating boilers, the energy input may be determined without much difficulty, it is usually very difficult if not impossible to determine directly the heat absorbed. Such boilers operate almost invariably on closed systems. In steam systems, the steam formed is condensed in the radiators and returns to the boiler by gravity. Likewise in hot water systems the hot water rises, is cooled and returns to the boiler to be again heated. The rates of flow of the condensed steam or cooled water are low and it is usually not practical to interpose in the system any measuring device that can be relied upon to give accurate results.

Although in all of these systems, the heat absorbed cannot be directly measured it can be determined indirectly by measuring the losses and subtracting them from the total heat supplied.

Losses In a Boiler

The diagram, Fig. 1, shows what happens to the heat of one pound of coal burned under a boiler. The heat supplied is indicated by the main stream H, the heat absorbed and usually employed is indicated by the branch H_2. The various losses are shown by the branches L_1—L_2—L_3—L_4—L_5.

L_1 is the loss due to the sensible heat in the dry gases of combustion discharged to the stack.

L_2 is the loss due to the heat in the water vapor in the gases of combustion which are discharged to the stack.

L_3 is the loss due to unburned gases appearing as carbon monoxide in the stack gases.

L_4 is the loss due to unburned carbon in the ashes.

L_5 is the loss due to heat radiated from the boiler.

These losses are common to boilers of all types of heating systems and with the exception of the ash pit loss they apply also to oil and gas as well as to the solid fuels. The methods for measuring and calculating these losses are general and hold regardless of the kind of fuel used.

Data Necessary for Determination of Losses

The essential data necessary for the determination of these losses are given in the following table, together with the symbol by which they will be referred to in the following discussion:

Carbon per pound fuel—pounds (by analysis) $= \frac{\text{per cent}}{100} \ldots C$

Hydrogen per pound of fuel—pounds (by analysis) $= \frac{\text{per cent}}{100} \ldots H$

Ash per pound of fuel—pounds (by analysis) $= \frac{\text{per cent}}{100} \ldots A$

Moisture per pound of fuel—pounds (by analysis) $= \frac{\text{per cent}}{100} \ldots M$

Heat value of fuel—B.t.u. per pound ..... h

Combustible in ash—per cent ..... C_a

Temperature of room air— deg. Fahr. ..... t_1

Temperature of stack gases—deg. Fahr. ..... t_2

Temperature of boiler surface—average deg. Fahr. ..... t_3

Carbon dioxide in stack gases—per cent. by volume ..... CO_2

Carbon monoxide in stack gases—per cent. by volume ..... CO

Oxygen in stack gases—per cent. by volume .... O_2

Fuel fired per hour—pounds ..... W_f

Ash from ashpit per hour—pounds ..... W_a

Carbon lost in ashpit per pound of fuel fired $= \frac{W_a \times C_a}{100 W_f}$ lb. ..... C_u

Carbon burned per pound of fuel fired $= C - C_u$ lb. ..... C_b

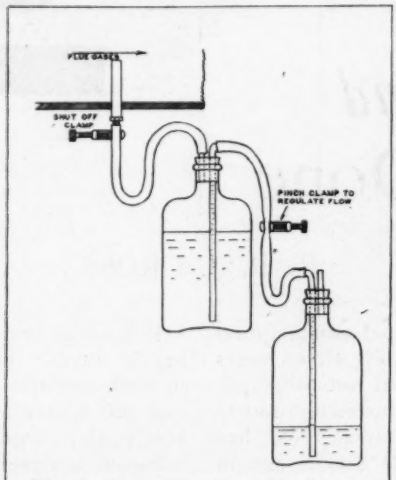


Fig. 2—Apparatus for collecting a continuous sample of flue gases. By siphoning the water from the upper bottle the sample of gas is drawn into it. The rate of flow is regulated by the small screw clamp

The above table includes all of the essential data to be observed and recorded for the test.

Dry Flue Gas Loss

The largest item of the losses is that due to the heat in the dry stack gases, L_1. The magnitude of this loss depends upon the weight of gases discharged and upon their temperature. A definite amount of air is necessary in order to insure complete combustion of the fuel. Any excess of air over this amount results in increasing this loss. To determine this loss it is necessary to know the temperature of the stack gases, their analysis and the weight of carbon burned per pound of fuel. The loss expressed in B.t.u. per pound of fuel fired is equal to

$$\frac{4CO_2 + O_2 + 700}{3\,(CO_2 + CO)} \times C_b \times .24\,(t_2 - t_1)$$

It may be seen that this loss varies directly with the temperature of the flue gases, t_2, and inversely with the CO_2 content of the gases. Obviously it is an advantage to keep the temperature low and the per cent CO_2 high. The temperature of the flue gases leaving the boiler rises as the rating on the boiler is increased. This loss therefore is larger at the higher ratings. When the heating surfaces become coated with ash the temperature of the escaping gases increases. To keep the per cent of CO_2 in the flue gases high it is necessary to regulate the air supply carefully. Air admitted under the grate affects only the rate at which the fuel is burned. The CO_2 content of the flue gases is affected by the air that is admitted over the fuel bed and by air leakage into the furnace and gas passages beyond the fuel bed. Some air is necessary over the fuel bed to complete the combustion. Any excess of air over this necessary amount dilutes the flue gases and increases the loss due to heat in the dry flue gases.

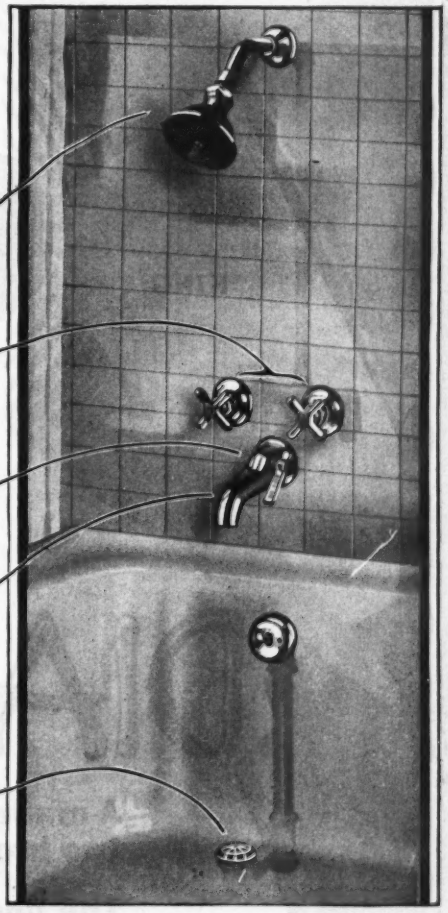
Water Vapor Loss

The loss due to the water vapor in the flue gases, L_2, depends upon the weight of water vapor present in the gases per pound of fuel fired and upon the temperature of the gases. The water vapor in the flue gases comes from the moisture present in the fuel and that formed when the hydrogen in the fuel burns. As one part of hydrogen requires 8 parts of oxygen for its combustion, the weight of water formed will be equal to nine times the weight of hydrogen in one pound of fuel or 9H. As all the water must be evaporated and superheated to the temperature of the flue gases the loss due to water vapor in the flue gases, expressed as B.t.u. per pound of fuel fired is equal to:

$$(9H + M) \times 1050 + .47\,(t_2 - t_1)$$

In this formula 1050 is the latent heat of vapor-

5 FEATURES that will interest plumbers installing new bath fixtures



1. A new 4-inch cast brass shower head so constructed that none of the holes will stop up. Always 49 streams shooting in the right direction. Face plate removable by loosening center screw, which cannot fall out. Asbestos face plate washer. All-metal ball joint perfectly machined. No packing washer to break up and clog the holes in the head.

2. Only two valves, separate HOT and COLD, in the wall. Readily accessible from face of wall. Made with the standardized working unit that's renewed as easily as a light bulb. All wearing parts come out with the loosening of the cap. Seat made of Monel Metal.

3. Diverter valve in spout on wall—not in wall. All-metal—no rubber, no spring. Operates by water pressure and gravity. Shower bather tempers water at spout and lifts lever for shower. No accidental scalding. When shower bather shuts off HOT and COLD valves, diverter automatically returns to tub position. No unexpected showers.

4. A 1-piece fitting for 6-inch centers. Real adjustability for varying wall thicknesses. Only two valves, spout and shower to connect up.

5. A pop-up bath waste with the stopper in the outlet of the tub. No need to get at it from behind.

The "MANHATTAN"

You'll find many other items of equal merit in our new 76-page catalog. Mail the coupon now.

76 Page Catalog

Send me your new catalog and a few hints on the "Manhattan"

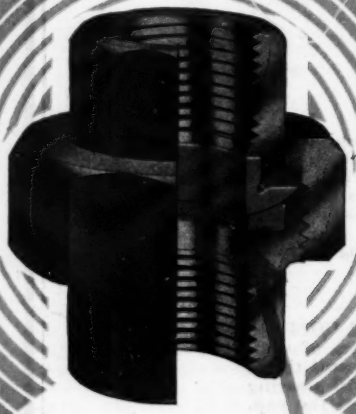
Name.....

Address.....

THE CHICAGO FAUCET CO.
2700-22 N. Crawford Ave. Chicago

CHICAGO FAUCETS

Introducing the



DIAMOND

A malleable iron union with two bronze seats.

The double seat in this union is inserted by a special process which locks the rings and completely eliminates leaking.

The bronze to bronze seat is your guarantee against rust and corrosion.

Every Union Air Tested Under Water

KING UNION COMPANY, INC.

HILLSGROVE :: R. I.

ization at room temperature (70 deg. Fahr.) and .47 is the specific heat of water vapor.

The loss due to the presence of water vapor in the flue gases is almost entirely unpreventable. As the greater part of this heat is required to change the water from liquid to vapor, this loss is but little affected by the flue gas temperature. This loss can be reduced by choosing fuels low in hydrogen such as coke and anthracite. Oil and gas have a high hydrogen content, and loss due to water vapor formed when this hydrogen is burned, is higher than with the solid fuels.

Loss due to carbon monoxide in the stack gases. When carbon burns completely it unites with

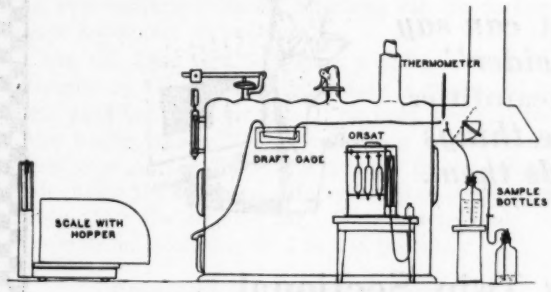


Fig. 3—Diagram of boiler with apparatus for test

oxygen to form CO_2 and liberates 14,600 B.t.u. per pound of carbon burned. If the supply of oxygen is insufficient, some of the carbon is not completely burned and forms CO which then appears in the flue gases. The part of the carbon that burns to CO liberates only 4,440 B.t.u. per pound of carbon. When carbon burns to carbon monoxide instead of carbon dioxide, there is, therefore, a loss of 10,160 B.t.u. per pound of carbon. The proportion of carbon that burns to CO is given by the fraction $\frac{CO}{CO + CO_2}$ and the loss in B.t.u. per pound of fuel fired is equal to

$$\frac{CO}{CO + CO_2} \times C_b \times 10{,}160.$$

The presence of carbon monoxide in the flue gases indicates that the air supply over the fuel bed, either is insufficient in quantity or that if sufficient it is not well mixed with the combustible gases rising from the fuel bed. The mixing of course will never be perfect and therefore an excess of air over the theoretical requirements will be necessary. In hand fired furnaces, a large part of the volatile gases are driven off from the fuel immediately after firing and a large quantity of air is necessary over the fuel bed for their combustion. After these gases have been driven off, less air over the fuel bed is needed. As it is usually impractical to adjust the air supply to the varying requirements of the fuel, a setting should be made which will result in the lowest net loss over the firing cycle. That is, an air adjustment should be made that will not cause too great a loss due to carbon monoxide over the early part of the firing period and that will not cause too high a loss due to excess of air over the latter part of the period after the volatile matter has been driven off.

Loss due to unburned carbon in the ashpit refuse. When a solid fuel such as coal or coke is burned, part of the carbon escapes combustion and appears as coke, mixed with the refuse in the ashpit. All of the ash made during the test period should be weighed and a sample carefully prepared. From the analysis of this sample the per cent of combustible in the refuse may be determined. This combustible content, which is usually determined by the loss of weight on ignition of the sample, is assumed to be carbon and to have a heat value of 14,600 B.t.u. The loss due to unburned carbon in the ashpit refuse in B.t.u. per pound of fuel fired is equal to

$$\frac{W_a \times C_a}{100 W_f} \times 14{,}600.$$

This loss, of course, does not exist in the ashless fuels, oil and gas.

If it may be assumed that all of the ash in the fuel goes into the ashpit, which is substantially true in most cases, the loss due to unburned carbon may be calculated by a second method which does away with the necessity of weighing the refuse from the ashpit. The weight of true ash per pound of fuel (by analysis) is divided by $\left(1 - \frac{C_a}{100}\right)$. This gives the weight of ashpit refuse per pound of fuel fired. If from this quantity we subtract the ash in the fuel (by analysis), we get the carbon in the ash per pound of fuel fired. By this method the loss due to unburned carbon per pound of fuel fired is equal to

$$\left(\frac{A}{1 - \frac{C_a}{100}} - A \right) \times 14{,}600$$

Loss Due to Radiation from the Boiler

The loss of heat due to radiation from the boiler and setting cannot be measured with high accuracy but can be closely approximated. This loss is almost constant at all boiler ratings as it depends for any given boiler only upon the temperature of the boiler surface and the temperature of the surrounding surfaces. To determine this loss it is necessary to know the area of exposed surface of the boiler, its surface temperature and the temperature of the surrounding surfaces. This latter temperature may be taken as room temperature. The total loss in B.t.u. per hour per pound of fuel fired is equal to

$$\frac{\text{Area} \times C\left[\left(\frac{t_s}{100}\right)^4 - \left(\frac{t_1}{100}\right)^4\right]}{W_c}$$

C is a factor depending upon the nature of the surface. For white asbestos and magnesia surfaces this factor is .16. For black iron surfaces the factor is also .16. If the surface is aluminum paint, the factor is .11. A close approximation of this loss may be

Burnham Boilers

The **Dentist** *can say "Open wider" but the* **Steamfitter** *must take things as he finds them.*

How Burnham Big Twin Sectional Gives You Help In Tight Places

HERE'S a boiler just built to meet conditions. It does not ask to have conditions made for it.

It's big enough to tackle successfully the big heating jobs in schools, churches, theatres and other large buildings, where heating conditions are difficult and often requirements irregular.

Yet when installed there is no single part of it too large to be passed through the ordinary cellar window. A feature of unusual importance in set ups and replacement work.

It has the famous Burnham fuel saving long fire travel that makes the short coal bill.

Even the water sections are twins, divided right and left along the spine of the boiler. Interchangeable right and left. No special sections to look out for when you're setting it up.

Send for our Catalog of Burnham long fire travel boilers for every heating requirement.

Burnham Boiler Corporation

IRVINGTON, N. Y.

Representatives in all principal cities of the United States and Canada

made by assuming a loss of 2.5 B.t.u. per square foot of surface for each degree Fahrenheit temperature difference between the boiler surface and the surrounding surface.

The surface temperature may be measured by lightly imbedding a thermometer in the surface of the insulation or by binding the thermometer to the surface with a strip of muslin or the material used to surface the insulation.

It is now general practice to cover the boiler and exposed piping with a good thickness of asbestos and magnesia insulation. The radiation losses are thus greatly reduced. It is interesting to note that by painting the surfaces with aluminum paint which has a low radiation factor, this loss can be further reduced by about 30 per cent.

While the heat radiated from a boiler is usually considered as lost, a part of this loss is recovered in the air used for combustion. If no heat was emitted by the boiler, the air for combustion would enter the boiler at outside air temperature. In the winter the air inside the boiler room may be 30 to 50 degrees warmer than the outside air. This corresponds to an increase in efficiency of 1 to 1½ per cent.

Apparatus for Testing Boilers

The apparatus necessary for the observation of the data listed consists of scales for weighing the coal fired and the refuse removed from the ashpit, thermometers for the measurement of the temperatures and an orsat for analyzing the flue gas. It is usually desirable to collect a sample of the flue gases continuously and make the analysis at hourly intervals. In this case collecting bottles are necessary. These should consist of two bottles of about one gallon or larger in capacity. One of them is filled with water, the gas being drawn into it as the water is siphoned to the other. This arrangement is shown in Fig. 2. When the sample is completed the tube leading to the flue is disconnected and attached to the orsat. The sample can then be caused to flow into the orsat by elevating the bottle into which the water was siphoned. Fig. 3 shows a boiler equipped for a test. While not absolutely essential the draft gauges showing the draft difference between the ashpit and the stack connection and the draft at the damper will give useful information and assist in keeping the rate of burning uniform. The pressure drop across the fuel bed is a direct measure of the rate of burning fuel and is especially important in the case of forced draft installation.

A test period of from 3 to 6 hours long is usually sufficient to obtain the data from which to compute these losses. The boiler should be operated at a steady rating over the test period. A constant rate of burning can be maintained by holding the air supply constant. In natural draft installations the draft differential at the stack connection and the ashpit should be kept constant during the test period and the openings where the air for combustion is admitted should be kept in a fixed position. In forced draft installations the air pressure under the grate should be held constant during the test. These precautions will insure a uniform rate of combustion. The grates should be shaken and the ashpit cleaned just before the start of the test and again just before the close. The fuel bed should be at the same level and in the same condition at the close of the test as at the start.

In oil or gas fired installations the starting of a test is comparatively simple, it being only necessary to record the meter readings or tank levels of the fuel.

A suggested form for reporting tests is given below. This form lists the data necessary for the computation of the losses and the determination of efficiency and also data that will make it possible to compare the test results with those of other installations and with tests with different fuels.

TEST FORM

Test of a.....Boiler Date.....
Location.....

Boiler	Fuel
Type	Kind .....
Make	Type.....
Manufacturer's rating—	Analyses
sq. ft. radiation.....	Carbon—per cent.....
Heating surface—sq. ft.....	Hydrogen—per cent .....
Grate area—sq. ft.....	Moisture—per cent.....
Remarks	Ash—per cent.....
.....	Heat value—
.....	B.t.u. per lb.....

1. Duration of test—hours.....
2. Total fuel fired—lb.....
3. Total ashpit refuse—lb.....
4. Coal fired per hour—lb.....
5. Ashpit refuse per hour—lb.....
6. Temperature outside air—deg. F.....
7. Temperature room air—deg. F.....
8. Temperature flue gases—deg. F.....
9. Temperature boiler surface—deg. F.....
10. Draft at damper—inches water.....
11. Draft at ashpit—inches water.....
12. Draft differential—ashpit to damper—inches water.....

Analysis Stack Gases

13. Carbon dioxide—CO_2 per cent.....
14. Oxygen—O_2 per cent.....
15. Carbon monoxide—CO per cent.....
16. Combustible in ashpit refuse—per cent.....

Heat Balance	B.t.u. per lb. Fuel Fired	Pct. of Heat Fuel Fired
17. Loss due to heat in dry flue gases	.....	.....
18. Loss due to heat in water vapor in flue gases.....	.....	.....
19. Loss due to incomplete combustion—carbon monoxide	.....	.....
20. Loss due to combustible in ashpit refuse	.....	.....
21. Loss due to radiation from boiler surface	.....	.....
22. Total losses	.....	.....
23. Heat absorbed by boiler—by difference	.....	.....

Capacity

24. Total heat absorbed per hour by boiler—B.t.u.....
25. Total radiation developed—sq. ft.....
26. Per cent of rated capacity developed.....
27. Fuel burned per hour per sq. ft. of grate area—lb.....
28. Fuel burned per 100 sq. ft. radiation developed—lb.....
29. Cost of fuel per 100 sq. ft. radiation developed—cents.....

A test conducted as above described is really more than an efficiency test. Information as to the losses is just as important, if not more important than a knowledge of the efficiency. Each loss may be studied and clues for reducing the losses will often present themselves.

Opposition *Within* the Plumbing Trade *to* Improvement of Plumbing

By S. M. BARR

IT IS almost a certainty that if some particular result is well worth while, only by hard, persistent and intelligent work can it be obtained. We see this repeatedly wherever the effort is being made to supplant obsolete plumbing laws with laws that have been demonstrated to be superior.

It might reasonably be expected that many interests and individuals outside the plumbing trade would naturally obstruct such efforts. It is human nature to do so, and one does not have to go further than that to find a reason for the outsider's antagonism. In this intelligent age, an age which very generally desires only the best, education will generally heal such antagonism.

But it is difficult to understand why so many in the plumbing trade are to be found, who either actively oppose any change from the old order of things, or who are so passive that it actually amounts to opposition.

While no doubt many factors may enter into the proposition, we feel that there are two states of mind that account for the larger part of this situation,—ignorance and fear.

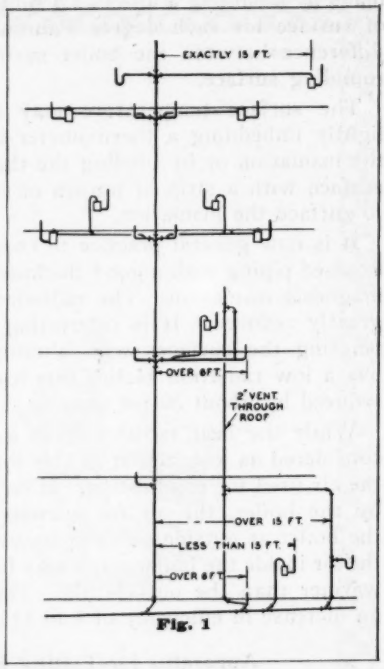


Fig. 1

When one is ignorant of advanced improved methods and practices in his profession or in his line of business, how can he be expected to wax enthusiastic over the prospect of leaving obsolete practices behind, in favor of improved conditions?

We very much fear that this condition is responsible for much of the opposition, active and passive, that comes from a considerable number of the plumbing trade in many sections of the country, to the enactment and enforcement of modern plumbing laws.

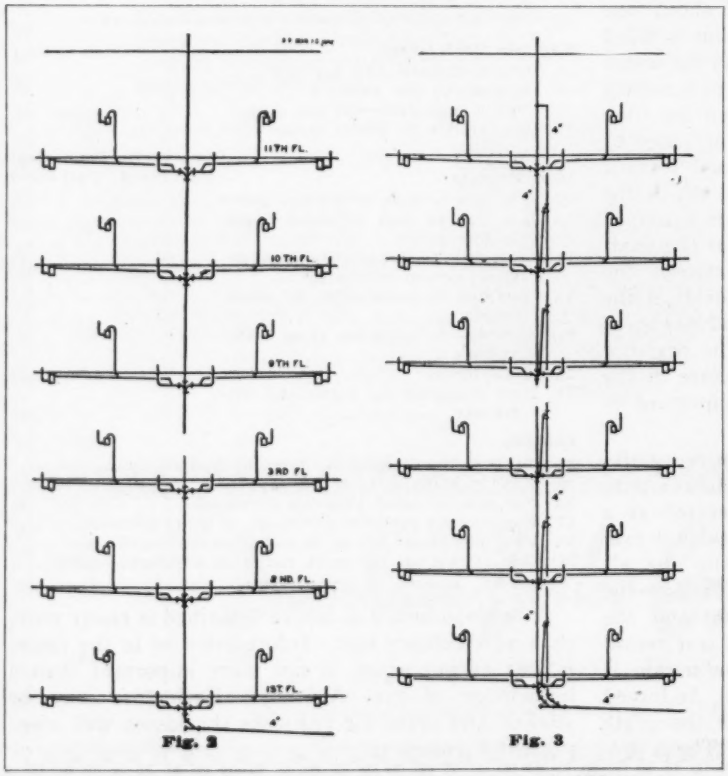
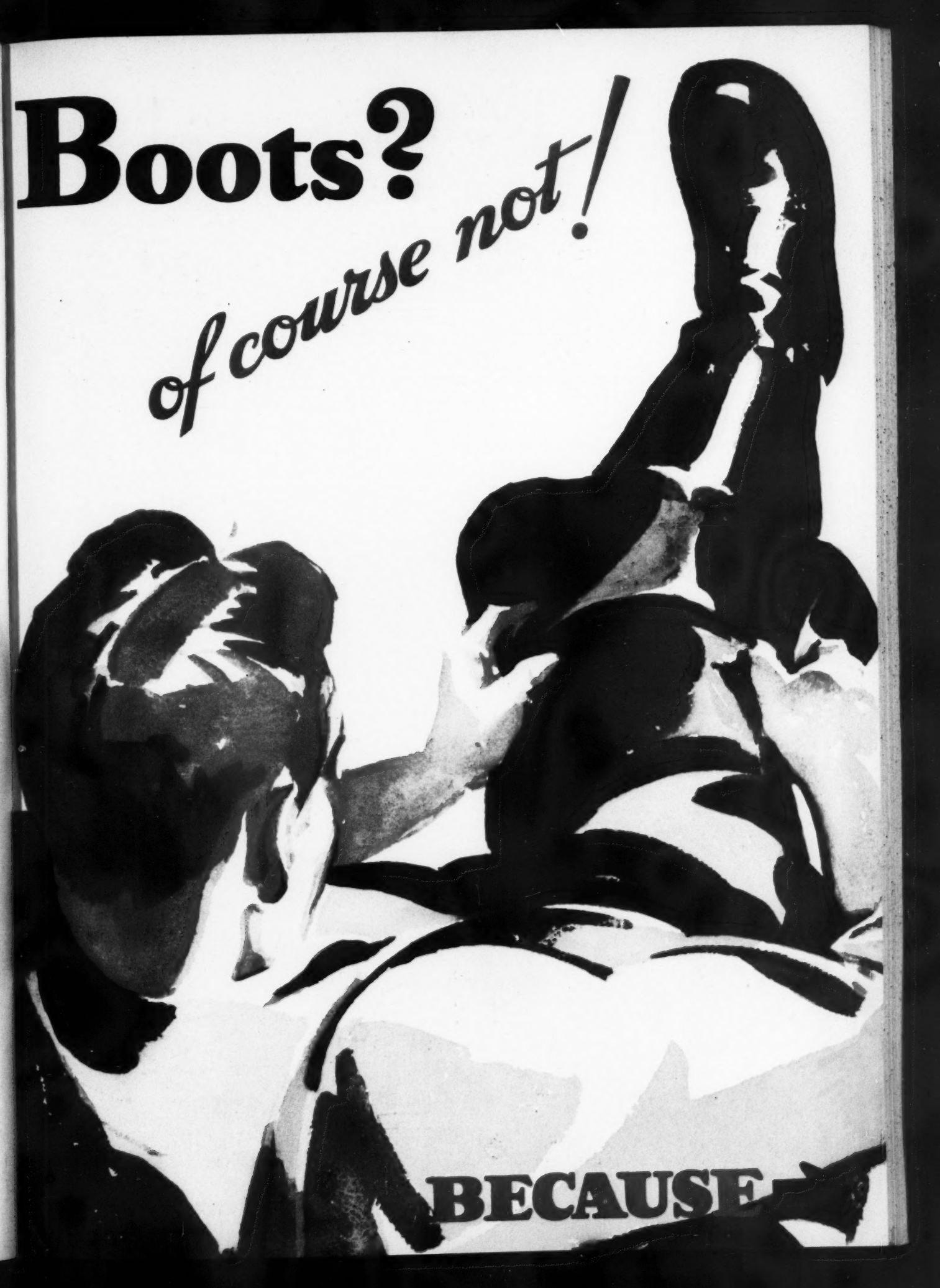


Fig. 2

Fig. 3

We have many times been surprised at the lack of knowledge of modern plumbing requirements evidenced by members of the plumbing trade. Where that condition is general, you will usually find that the status of plumbing in that city or town, reflects the backwardness that is expressed by the plumbing trade itself. This seems a harsh thing to say concerning any part of the plumbing trade in this day when information is so freely obtainable.

Coupled with ignorance, we have often noticed another thing,—a sort of reverence or worship for the customs and practices of the past, regardless of their actual merits. It is this quality in a plumber that often makes him stick to some old-time method,—to an obsolete type of trap for instance, when he ought to be using something better. It was all right for his father and his grandfather to swear by that particular kind of a trap, for it was the best to be obtained in their day, but that day has gone, and the son and grandson should be sufficiently awake and alert to be interested in something


Boots?
of course not!
BECAUSE

A Jennings SUCTION SEWAGE Pump is located outside the pit

You can forget your boots when inspecting it . . .

HERE'S a sewage pump that is always accessible. One that you can get at for cleaning or inspection without fuss or bother. Boots aren't necessary. There is no need ever to go down in the pit.

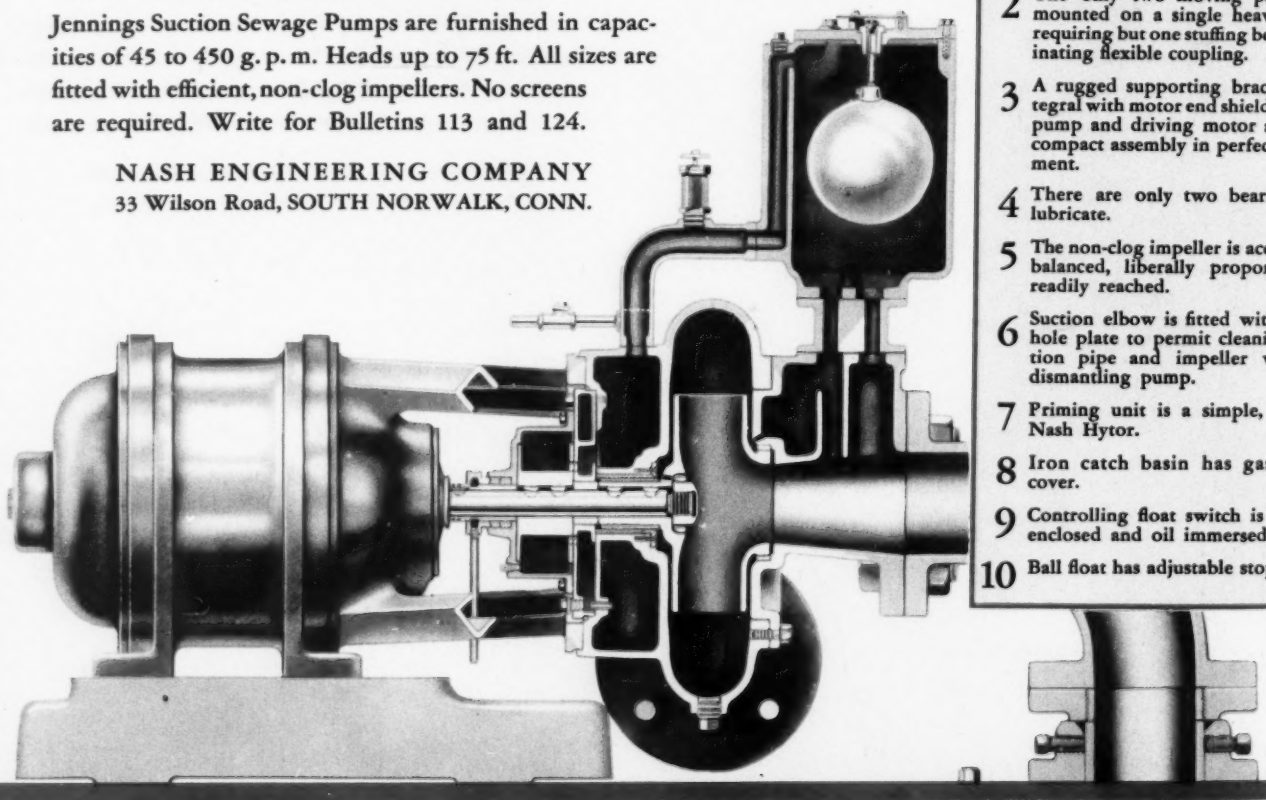
The Jennings Suction Sewage Pump is installed on the floor above the pit. Pump, motor and controls are right out in the open. A few minutes work with a wrench gives access to the interior. Impeller is removable without disturbing piping, packing or shaft alignment.

Jennings Suction Sewage Pumps are furnished in capacities of 45 to 450 g. p. m. Heads up to 75 ft. All sizes are fitted with efficient, non-clog impellers. No screens are required. Write for Bulletins 113 and 124.

NASH ENGINEERING COMPANY
33 Wilson Road, SOUTH NORWALK, CONN.

Note these 10 *features of Jennings Design*

1. Motor is commercial, ball-bearing type selected for dependability, always available from stock.
2. The only two moving parts are mounted on a single heavy shaft requiring but one stuffing box, eliminating flexible coupling.
3. A rugged supporting bracket, integral with motor end shield, makes pump and driving motor a single compact assembly in perfect alignment.
4. There are only two bearings to lubricate.
5. The non-clog impeller is accurately balanced, liberally proportioned, readily reached.
6. Suction elbow is fitted with hand hole plate to permit cleaning suction pipe and impeller without dismantling pump.
7. Priming unit is a simple, sturdy Nash Hytor.
8. Iron catch basin has gas tight cover.
9. Controlling float switch is totally enclosed and oil immersed.
10. Ball float has adjustable stop.



Jennings SUCTION SEWAGE *Pumps*

NASH ENGINEERING COMPANY SOUTH NORWALK, CONN., U. S. A.

far better than this.

Now how about fear? That is a quality that enters into the proposition in several different ways.

In the first place, there is often fear that one's customers will object to the increased cost of improved plumbing, and the added fear that they will go to some competitor, who in some way will "get by" with an installation that will cost the customer much less money. Of course the answer to this last difficult condition is that along with modern plumbing must go modern administration and enforcement of plumbing laws in a strict and impartial way. Without that, the entire program is a weak one.

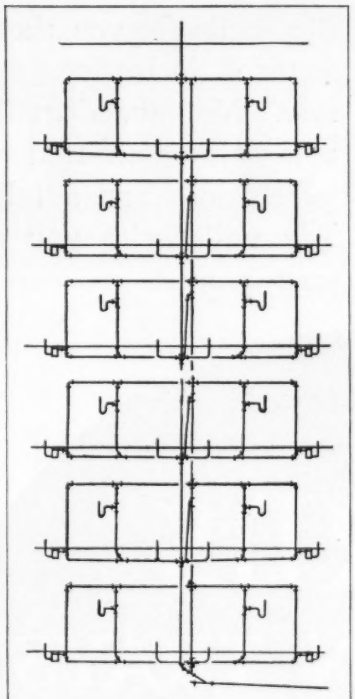


Fig. 4

Then there is another fear,—the fear that the new demands for different changes in methods are going to create a difficult situation,—the fear that younger men, better posted on modern ways and means will gain the advantage, etc.

Notwithstanding these various seemingly difficult conditions, progress cannot be forever held back, and whether or not in some instances difficult situations have to be faced,—why not face them, and do it with the idea that the same changes that have so greatly benefited other cities and towns are capable of doing the same thing for your town.

We have been prompted to write the foregoing through having recently heard of the difficulties encountered in one of our leading southern cities in getting away from the terms of an obsolete plumbing code into something modern and better.

So far as we know the problem for that city has as yet not been fully solved, but conditions are improving, the plumbing trade itself is supporting the effort in a more independent and more enthusiastic way.

Obsolete Regulations in Force

Just to show what this city is trying to escape from, we want to illustrate and discuss some of the plumbing practices still in common use there.

In the first place, this is a city where the non-siphon trap is used almost exclusively under an ordinance which allows such a trap, when approved by the plumbers' examining board, to be installed without venting on lavatories, sinks, baths, urinals and wash trays whenever they are not more than 15 ft. from a main or direct vent. Naturally such a liberal treatment makes it almost impossible for a vented plumbing system to be installed. This condition is added to by the fact that a water closet whose branch is under 6 ft. in length may be installed without a vent.

The principal features of the plumbing practice called for by the city we have mentioned, are to be seen in Fig. 1.

Any of the small fixtures within 15 ft. of a stack are not required to be vented if they are served by an approved non-siphon trap, and a water closet that is not over 6 ft. away does not require venting.

It is seldom that we have seen a plumbing elevation

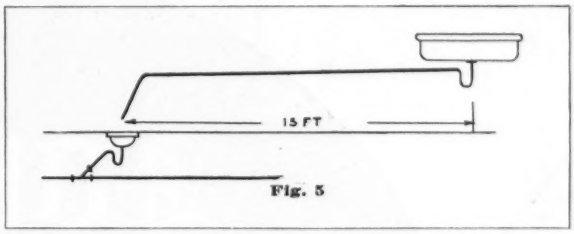


Fig. 5

that seems more out of tune with modern plumbing requirements than this elevation of Fig. 1, which is typical of the work done in this city.

Plumbing Inspector Objects to Installations Without Vents

In Fig. 2 is shown the plumbing layout as designed by a local architect for a hotel recently erected in this same city, in which many stacks accommodating twenty-two bathrooms, two on each floor, were installed. The plumbing inspector refused to approve this layout, basing his decision on his interpretation of the following section in the plumbing code: Any non-siphoning trap, after being tested to the satisfaction of the plumbers' examining board, may be used on all work in lieu of back-vent pipes, when connected with a wash basin, sink, bath, urinal or wash tray, which is not more than 15 ft. from a main or direct vent."

In the inspector's opinion, a soil stack with fixtures connected at different floors, could not be considered a main or direct vent at any point below the top floor.

Under this interpretation, the plumbing system was required to be installed according to the elevation shown in Fig. 3. This shows a main vent, with the water closets vented into it at each floor below the top floor. The idea is that, according to this interpretation, even the venting of the water closets could not be required except for the fact that the minor fixtures in order to be installed without vents must be within 15 ft. of a "main or direct vent," and the installing of the main vent covered this point.

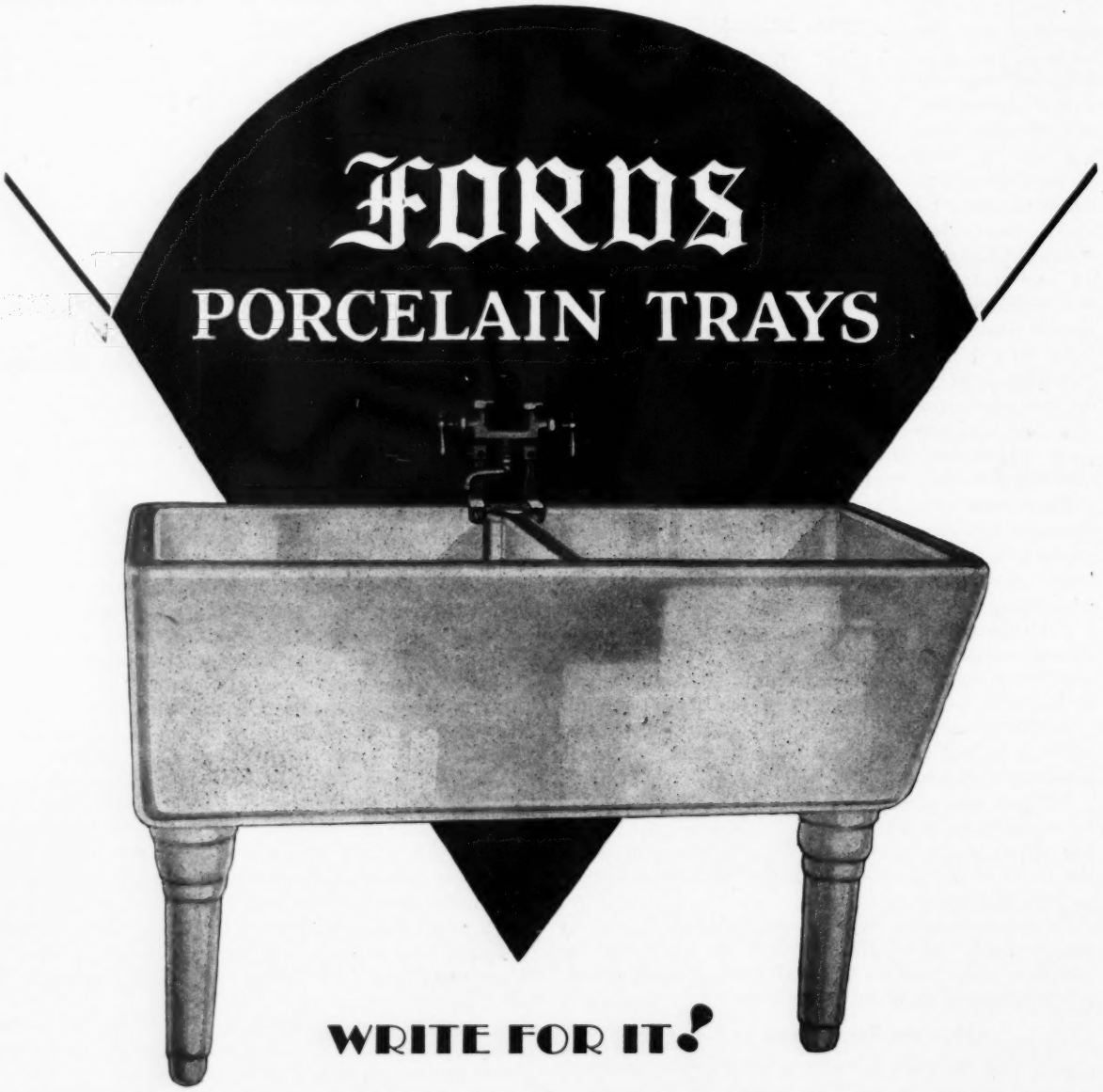
A half-loaf is better than none, and the venting of the water closets is the half-loaf, for certainly the other bathroom fixtures should also be vented.

The difficulty concerning this large hotel installation well illustrates the difficulty that many a city plumbing department encounters in the effort to get good plumbing installed under defective or ineffective or obsolete plumbing ordinances.

In this particular city, it was a triumph for good plumbing that a way was found whereby the water closets

(Continued on Page 189)

FORDS Porcelain Trays are real profit makers. They have every feature of quality needed to make them the leaders they are. With them you can assure your customers of EXTRA trouble free service and because of the satisfaction and good will they build for you, they will be a real factor in increasing your general business. We have a detailed understandable sales plan that will help you merchandise and sell Fords Porcelain. We will write you about it upon your request.



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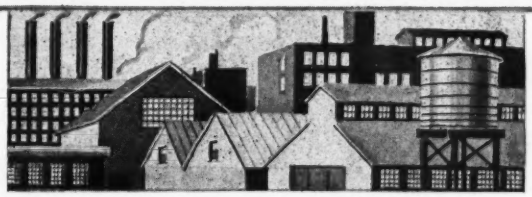
PERTH AMBOY, NEW JERSEY

MANUFACTURERS OF SANITARY WARE

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN



American Radiator & Standard Sanitary Corp. Organizes Canadian Financing Unit

The American Radiator & Standard Sanitary Corp., New York City, has organized a time payment finance company under the auspices of its Canadian subsidiaries, the Dominion Boiler & Radiator Co., Ltd., and Standard Sanitary Mfg. Co., Ltd. This company has been organized under the laws of the Dominion of Canada and is known as the Heating and Plumbing Finance, Ltd., with head offices at 1320 Dufferin street, Toronto, Ontario.

The purpose of the organization is to finance the products of all Canadian subsidiaries of the American Radiator & Standard Sanitary Corp. The present relations between the Canadian subsidiaries and their distributors will not be changed in any way.

◆

Gorton Heating Corp. Has New President

The Gorton Heating Corp. has announced the removal of its general offices from 96 Liberty street, New York City, to Garwood, N. J., where its factory is also located.

The following board of directors has been elected to manage the business: John L. Lehman, president of the Esda Mfg. Co.; Lane McLean, vice president and general manager of Lidgerwood Mfg. Co., and Harry F. Reynolds, eastern sales manager of Wm. B. Scaife & Sons Co.

Mr. Lehman has also been elected president and treasurer of the Gorton Heating Corp. Clyde L. Ferguson has been elected secretary.

◆

Pittsburgh Tube Co. Opens New York City Office

The Pittsburgh Tube Co., Pittsburgh, Pa., has announced the opening of an office at 210 East 45th street, New York City. John G. Kelly is district manager of sales on thin standard pipe.

◆

Visit Universal Sanitary Mfg. Co. Plant

Officials of the Universal Sanitary Manufacturing Co., New Castle, Pa., played host on Saturday, June 21, to a crowd of about 250 persons, when representatives of the Halsey W. Taylor Co., of Warren, Ohio, and their families, visited the Universal company's plant, attended the flag raising and ball game and went through the plant.

The Houston, Tex., branch of Jas. B. Clow & Sons

Opening the afternoon's events an American flag was raised over the new ball diamond of the company. Led by the Universal Sanitary Company's band, directed by W. W. Wallace, the crowd marched to the ball field where Paul Taylor of the Halsey W. Taylor Co., J. J. Johnson, a director of the Universal Sanitary Manufacturing Co., and S. L. Barnes, plant superintendent for the latter firm, raised the flag. A baseball game between teams representing the two firms was won by the New Castle firm, 7 to 1.

After the visit through the plant the visitors enjoyed a dinner, served barbecue style, and listened to a number of selections by the harmony banjo quartet.

◆

International Radiator Corp. Begins Production

The International Radiator Corporation, Port Chester, N. Y., has completed the installation of modern machinery and appliances in its factory, in that city. The president of the concern is Austin H. Hart, who has been associated in an executive capacity with various radiator manufacturers for a number of years.

◆

B. F. Sturtevant Co. Moves Minneapolis Branch

The B. F. Sturtevant Co. of Hyde Park, Boston, Mass., has announced the removal of its Minneapolis, Minn., branch office from 1024 Metropolitan Life building to 874-875 Northwestern Bank building. P. A. Dwyer will remain in charge.

◆

R. Lavin & Sons Increases Plants Capacity

R. Lavin & Sons, Chicago, who recently moved into their new plant at 34th and Kedzie streets will by August 1 be in full production. The plant covers approximately 5 acres and consists of several buildings. The stock room and warehouse is 100 x 300 ft., while the smelting and refining unit is 100 x 600 ft. Ten ton cranes will handle all material and will be used in charging four batteries of oil-fired furnaces.

The plant is so situated that five freight cars can be loaded under cover at the same time and boat docks will be arranged for adjoining the plant. When the plant is in full operation it will give the company 500 per cen increase capacity of both red and yellow ingots.

◆

Crane Co.'s Philadelphia Branch Celebrates Company's 75th Anniversary

In connection with the 75th anniversary of Crane Co., Chicago, the employes of the Philadelphia branch and their families held a picnic at Forest Park, Chalfont, Pa., on July 3. The picnicking group, numbering about 400, met at the company's Philadelphia warehouses at American and Master streets in the early morning and were taken by motor bus to Forest Park.

M. D. Robinson, manager of the Philadelphia branch, was in charge of the delegation of sub-branch managers, their wives, and the veterans of the Philadelphia branch who have served for more than 25 years, who attended the anniversary celebration in Chicago. Among the veterans from Philadelphia are: Charles A. Joachim, A. H. Burton, G. W. Vass, C. J. Burns, H. R. Body, Michael F. Murray, J. Conrad Liley, M. J. McCloskey, M. D. Robinson, J. A. Mueller, C. Walter Ellis, E. Y. Saeger, Mary E. Yocum.

◆

Manufacturer Has Unique Heating Exhibit at Convention of Building Owners and Managers

A unique exhibit that attracted considerable attention at the annual convention of the National Association of Building Owners and Managers, held at Biloxi, Miss., June 9-13, was the miniature operating weather compensating system of heating, displayed by James P. Marsh & Co., Chicago. The display consisted of a gas-fired heating boiler, a system of supply, radiation, return piping and vacuum pump, equipped with compensating control valve, radiator valves and traps, and control panel, including indicating and recording instruments.

◆

Mineral Felt Insulating Co. to Hold Sales Convention

The Mineral Felt Insulating Co., Toledo, Ohio, will hold its annual distributors' and dealers' sales convention, in Toledo, on July 25 and 26. While the complete program has not been released, the meeting will be in charge of a number of men of national prominence who are authorities in their particular fields. Several of the distributors and dealers will demonstrate their sales methods.

F. C. Russell

It is expected that over four hundred distributors and dealers will attend the convention, coming from all sections of the United States and Canada. Frank C. Russell is president of the company.

◆

Western New York A. S. H. V. E. Holds Mid-Summer Dance and Dinner

The Western New York Chapter of the American Society of Heating and Ventilating Engineers held its annual mid-summer dinner-dance at the Automobile club, Clarence, N. Y., on the evening of June 17. About seventy were in attendance.

◆

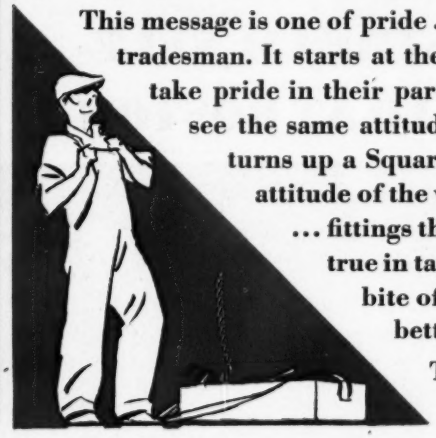
Entertains Technical Publicity Association

Jenkins Bros., New York City, acted as host to the Technical Publicity Association, at the annual frolic held May 16 at the Brooklawn Country club, Bridgeport, Conn.

The group was conducted on a tour of inspection through the plant of Jenkins Bros., and then motored to the Brooklawn club for luncheon. Golf was the chief sport indulged in during the afternoon.

A banquet was held in the evening, following which the gathering was entertained by a vaudeville program. James R. White acted as toastmaster at the banquet. The membership of the Technical Publicity Association includes the advertising managers of many of the largest industrial companies in the country. Members and their

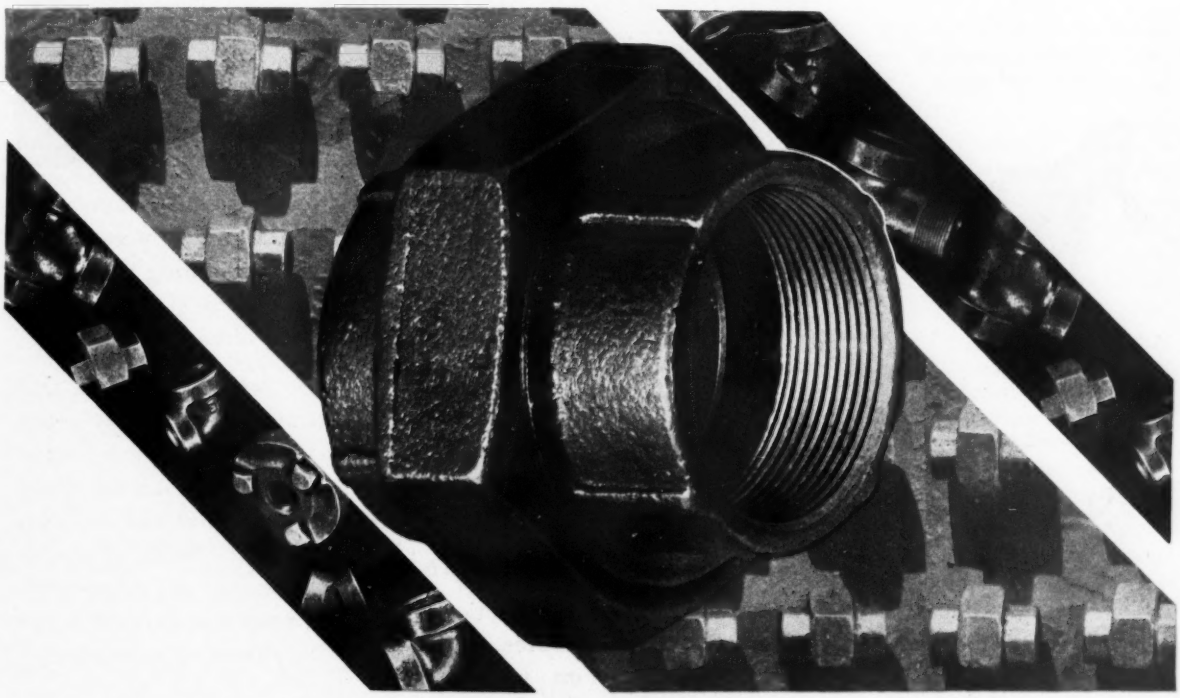
to the Man on the Job



This message is one of pride . . . pride in the skill of the tradesman. It starts at the Grabler factory where men take pride in their part in Square "Gee" quality. You see the same attitude again when the man on the job turns up a Square "Gee" fitting. You can promote this attitude of the worker by giving him the right incentive . . . fittings that are accurately aligned; clean cut threads true in taper and pitch and bands of ample width for the bite of the wrench. Square "Gees" help a good man do a better job and that's just good business for both of us.

THE GRABLER MANUFACTURING COMPANY
6565 Broadway . . . Cleveland, Ohio
Warehouses: New York, Chicago, San Francisco and Los Angeles

YOUR FITTING PROBLEM IS SOLVED WHEN YOU SAY SQUARE "GEES"



SQUARE Pipe

"GEE" Fittings

MALLEABLE, CAST IRON DRAINAGE, BRASS

WHILE MEMBERS OF THE N. A. M. P. WATCHED DEMONSTRATIONS OF THE NEW SPEAKMAN ANYSTREAM SELF-CLEANING SHOWER HEAD AT BOSTON

The tapered grooves in the plungers do it!

Flushing out all scale and dirt

Normal shower

Needle spray

NEVER was a demonstration more convincing than when the plug in the supply line was taken out and the line filled with cinders. The water was then turned on, and, with one flush—half a turn of the lever handle—all the cinders (several ounces of them) were blown out through the slots in the shower head.

The Anystream Self-cleaning Shower Head would not stop up!

Then came other demonstrations at various water pressures, with all the apparatus on hand to register pressure and volume of water being used. One of the most convincing demonstrations was lowering the water pressure to 10 pounds, and pulling the handle back, so that a strong needle shower was obtained.

Everyone who witnessed this demonstration agreed that today no shower is modern without a Speakman Anystream Self-cleaning Shower Head. Always include it in the price of the installation—make an extra profit and give your customers this last word in shower convenience.

Also sell this shower head for replacement.

Folders, stickers, blotters, imprinted with your name and address, are available.

SPEAKMAN COMPANY
WILMINGTON, DELAWARE

K-3395 Speakman Anystream Self-cleaning Shower Head. Pat. Jan. 2, 1923. Price $15.00

SPEAKMAN
SHOWERS *and* FIXTURES

guests present included: J. R. White, G. R. Holmes, L. A. Weaver, W. C. Magee, J. C. Kress, J. A. Miller, J. J. Shuk, J. F. Connor, P. J. Coughlin, H. J. Barnsley, C. J. Ketcham, L. A. Ladwig, J. A. Clement, C. T. Begley, A. J. Fisher, E. K. Stevens, R. A. Bolgan, J. L. Dunn, K. E. Cooley, A. J. Judge, C. B. Wagner, J. F. Ahrens, C. V. Barrington, B. J. Lee, W. E. Farrell, B. H. Miller, T. H. Bissell, J. W. Tracy and H. E. Leonard.

◆

Metropolitan Trade Plays Baltusrol Club

A difficult, sporty course in the Baltusrol Golf club, Short Hills, N. J., faced the twenty-four members of the Metropolitan Trade Golf Association who, despite the inclement weather of June 10, played a round and a half. This is the course over which the National Amateur Championship rounds were played in 1928 but the rain, incessant for a week, had turned some of the traps into what practically amounted to quicksand for the Metropolitan golfers.

Regardless of these circumstances it was conceded that the day was an enjoyable one, especially the dinner over which President T. A. Johnson presided in the club house at the conclusion.

J. Francis Murphy distributed the prizes which included clubs, balls, a golf bag, a silver flask, silver drinking cup, a silver decanter, and, quite appropriately, an umbrella to William S. Roe, the host. The next meet is scheduled for July 16 at the Pelham Country club, Pelham, N. Y.

Those participating in the distribution of the twelve prizes were as follows:

Class A

First low net, 28 holes	K. S. Roberts	103
First low net, 18 holes	T. A. Johnson	71
Second low net, 28 holes	J. S. Weaver	118
Second low net, 18 holes	C. G. Wall	72
Third low net, 28 holes	M. Ready	119
Third low net, 18 holes	L. Power	79

Class B

First low net, 28 holes	T. H. Dawson, Jr.	128
First low net, 18 holes	G. W. Hamill	70
Second low net, 28 holes	C. S. Coleman	129
Second low net, 18 holes	W. H. Murphy	76
Third low net, 28 holes	R. Williams	137
Third low net, 18 holes	H. W. Letcher	85

◆

Western New York Golfers Open Season

The first meeting of the year of the Western New York Trades Golf Association was held on May 15 at the South Shore Country Club, near Buffalo, N. Y. The meeting was well attended and, judging by the enthusiasm displayed, the year should be one of the most successful in the association's history.

L. N. Castin, president, outlined the plans for the season and stated that a new cup would be presented at the next meeting. The member having the lowest net score at the end of the season is to gain permanent possession of this new cup, but only those having attended not less than four tournaments will be eligible.

Thomas Cruikshank won the duffers cup with a gross score of 159. The following received six golf balls each for low net scores in their foursomes: H. B. Roarke, S. J. Barnett, A. K. Tinker, R. V. Benton, J. Bonner and W. E. Voisinet. The guest prize of six balls was won by F. W. Harney and W. H. Hayes, each of whom received three balls, due to the fact that their scores were tied.

Personal Mention

W. N. McVickar has been appointed Eastern Sales Manager of the United States Sanitary Mfg. Co., Pittsburgh, Pa., with offices at 103 Park Ave., New York City. Mr. McVickar, who has been connected with H. B. Smith Co., Myer-Sniffen Co., and for 7 years sales manager of Essex Foundry, Newark, N. J., in his new connection covers the metropolitan district of New York City and the New England States. He is assisted by J. D. Irons, who has been with the United States Sanitary Mfg. Co. for several years.

E. I. Boardman has joined the executive sales staff of Richardson & Boynton Co., New York City. Mr. Boardman was for a number of years connected with the American Radiator Co., in several of its branch offices, and was recently associated with the executive offices of the National Radiator Corp., at New York and Johnstown, Pa.

E. H. Gardner, formerly representative for Peck Bros. & Co., New Haven, Conn., is now the Kansas City, Mo., representative for The Peerless Selling Co., of Evansville, Ind.

W. B. Crawford, Chicago manager for Terre Haute Boiler Works, of Terre Haute, Ind., has been made sales manager of the company. He is moving to Terre Haute, where he will make his headquarters.

E. D. Curtis, formerly with Kohler Co., Kohler, Wis., is now connected with the A. L. Swett Iron Works, Medina, N. Y.

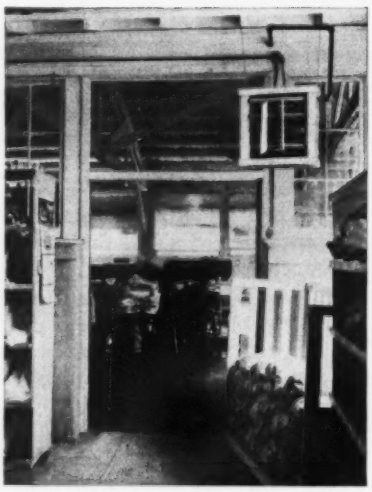
L. L. Wright, formerly manager of the Detroit, Mich., office of the Sloan Valve Co., Chicago, Ill., who left that company several months ago to represent the Imperial Brass Mfg. Co., Chicago, in New York City, has rejoined the Sloan organization.

Earl K. Williams, 280 Madison avenue, New York City, has been appointed representative of the Milwaukee Valve Co., Milwaukee, Wis., in the metropolitan New York territory and in northern New Jersey. Mr. Williams will also continue to represent the Dole Valve Co., of Chicago.

Michael J. Callahan, of the Peerless Unit Ventilation Co., Inc., Bridgeport, Conn., is convalescing from his recent illness and is improving rapidly.

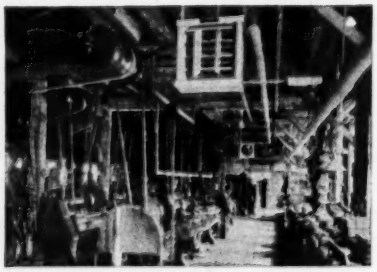
H. L. Joyce, president, and A. D. Rose, general sales manager of Jas. P. Marsh & Company, Chicago, attended the annual convention of the Heating and Piping Contractors National Association, held recently in New York City. While in New York, Mr. Rose also attended the regular June and directors' meetings of the Steam Heating Equipment Manufacturers Association.

John C. Chaffe, division manager of the Philadelphia office of A. M. Byers Co., Pittsburgh, Pa., for the past ten years, resigned on May 31, to become associated with the Wrought Iron Company of America, as assistant to the president. H. R. Rowland has been appointed division manager of the Philadelphia office to fill the vacancy created by Mr. Chaffe's resignation. Mr. Rowland comes from the company's Pittsburgh office. Mr. Chaffe will make his new headquarters in the Commercial Trust building, Philadelphia. He had been



Laundries are splendid Speed Heater prospects

Speed Heaters are ideal for garages



Hundreds of Speed Heaters are installed in factories

"Do I like speed heater jobs! Say..."

HOW do Speed Heaters stand with the men on the job? Say... Speed Heaters will warm the cockles of any journeyman's heart!

And is it surprising? Certainly not!

Not when you consider the fact that a *single* Speed Heater replaces anywhere from ½ to 3 tons of ordinary direct radiation! Just imagine the amount of gruelling work that Speed Heaters eliminate... the back-breaking hanging work... and the toting around of tons of pipe!

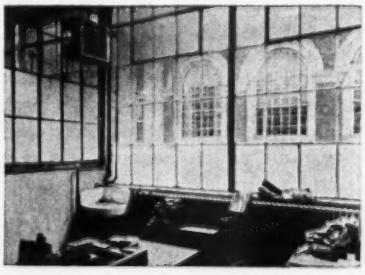
Speed Heaters simplify your labor problem. And remember this... Sturtevant's prices allow you to make a liberal margin of profit on the equipment itself!

Investigate Speed Heaters and the profits they insure. It makes no difference what kind of work you handle... big jobs or small... industrial or otherwise. Speed Heaters are being installed in almost every kind of place... even in offices, stores, and churches!

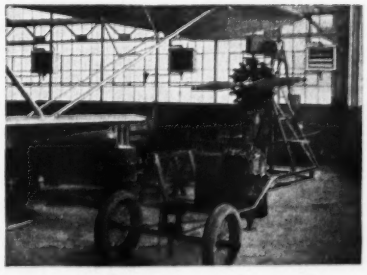
The coupon is handy. It takes but a minute to fill it out and mail.

B. F. STURTEVANT CO.
Main Offices: HYDE PARK, BOSTON, MASS. CHICAGO, 410 No. Michigan Ave. SAN FRANCISCO, 681 Market St.
Branch Offices: Atlanta; Baltimore; Boston; Buffalo; Camden; Charlotte; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Hartford; Indianapolis; Kansas City; Los Angeles; Milwaukee; Minneapolis; Newark; New York; Omaha; Pittsburgh; Portland, Me.; Portland, Ore.; Rochester; St. Louis; San Francisco; Seattle; Washington, D. C.
Canadian Offices: Toronto; Montreal; Galt. *Canadian Repre:* Kipp Kelly, Ltd., Winnipeg. *Agents in Foreign Countries*

Sturtevant
(REG. U. S. PAT. OFF.)
SPEED HEATERS



For offices—this cabinet type Speed Heater



Every airport has need for Speed Heaters

COUPON

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.

Kindly mail me "Tips on Heater Selling" and "Speed Heater Data".

☐ I'd like to see a Sales Cooperator when he's in the district.

Company .....

Address .....

City .....

D. E. 7-12-30

affiliated with the Byers company for about five years prior to being placed in charge of the company's Philadelphia office.

R. S. PATTEN of the Turner Brass Works, Sycamore, Ill., has been appointed general sales and advertising manager of that company. Mr. Patten has recently completed an eight months' trip, visiting the majority of the wholesale distributors of the Turner Brass Works.

JOSEPH L. FRITZ and RUSSELL B. KNEEDLER have recently been appointed representatives of the Keeney Manufacturing Co. of Newington, Conn., in lower New Jersey, Pennsylvania, Washington, D. C., Maryland and Delaware. J. M. BUTTS of Atlanta, Ga., has also been appointed representative of the Keeney Manufacturing Co. Mr. BUTTS will represent the organization in the southeastern states.

Crane Company Celebrates 75th Anniversary

Seventy-five years ago R. T. Crane started business in a small wooden shack in Chicago, with a small brass melting furnace, a bench and a few tools. Today this business, Crane Co., employs 20,000 people and uses 600 buildings.

SEVENTY-FIVE years ago, in a small shack in a corner of his uncle's lumber yard in Chicago, R. T. Crane began what is now a world-wide organization. Beginning with this small brass and bell foundry, Crane Co. has grown into an institution employing more than 20,000 people and using close to 600 business buildings to carry on the day's work.

The beginning was in 1855. July 3, 1930, 85,000 people in widely scattered places throughout the world, celebrated the start of this young mechanic in business for himself.

The chief celebration was in Chicago, where approximately 1,000 veteran employes and officials of the company and their families gathered to help nearly 10,000 employes in Chicago and their families and friends, observe the day. At the same time, other thousands were celebrating the event in Rangoon, Paris, Glasgow, Madras, Mexico City and in hundreds of other cities.

The Chicago celebration began on June 29 and continued to July 4, with the picnic on July 3 at Riverview park. All Crane offices, branches, exhibit rooms and warehouses throughout the world closed on that day.

During the celebration in Chicago, at a banquet in the Stevens hotel, attended by more than 1,000 veteran employes, 279 men and women received medals in recognition of their 25 years of service with the company.

A review of the history of Crane Co. reveals a steady and persistent growth from the period between 1855 and 1865, when R. T. Crane built the first pipe mill west of Pittsburgh, and the company's force increased from 3 to 200. During the period from 1865 to 1875, the first malleable iron foundry west of Pittsburgh was put into operation; new shops were built and others enlarged; the number of employes increased to 800. By 1885 this number had increased to 1,200. By 1895 the first branch house had been opened and the number of employes had increased to 2,500.

Then, during the next ten years, 1895-1905, the Bridgeport, Conn., division was established and a new factory and office building was erected in Chicago. The fiftieth anniversary was celebrated by 7,000 employes.

In the decade between 1905 and 1915 the new malleable plant and brass foundry in Chicago was completed, and R. T. Crane, the founder, died in 1912. The construction of the great Chicago Works on a tract one-half mile square was begun.

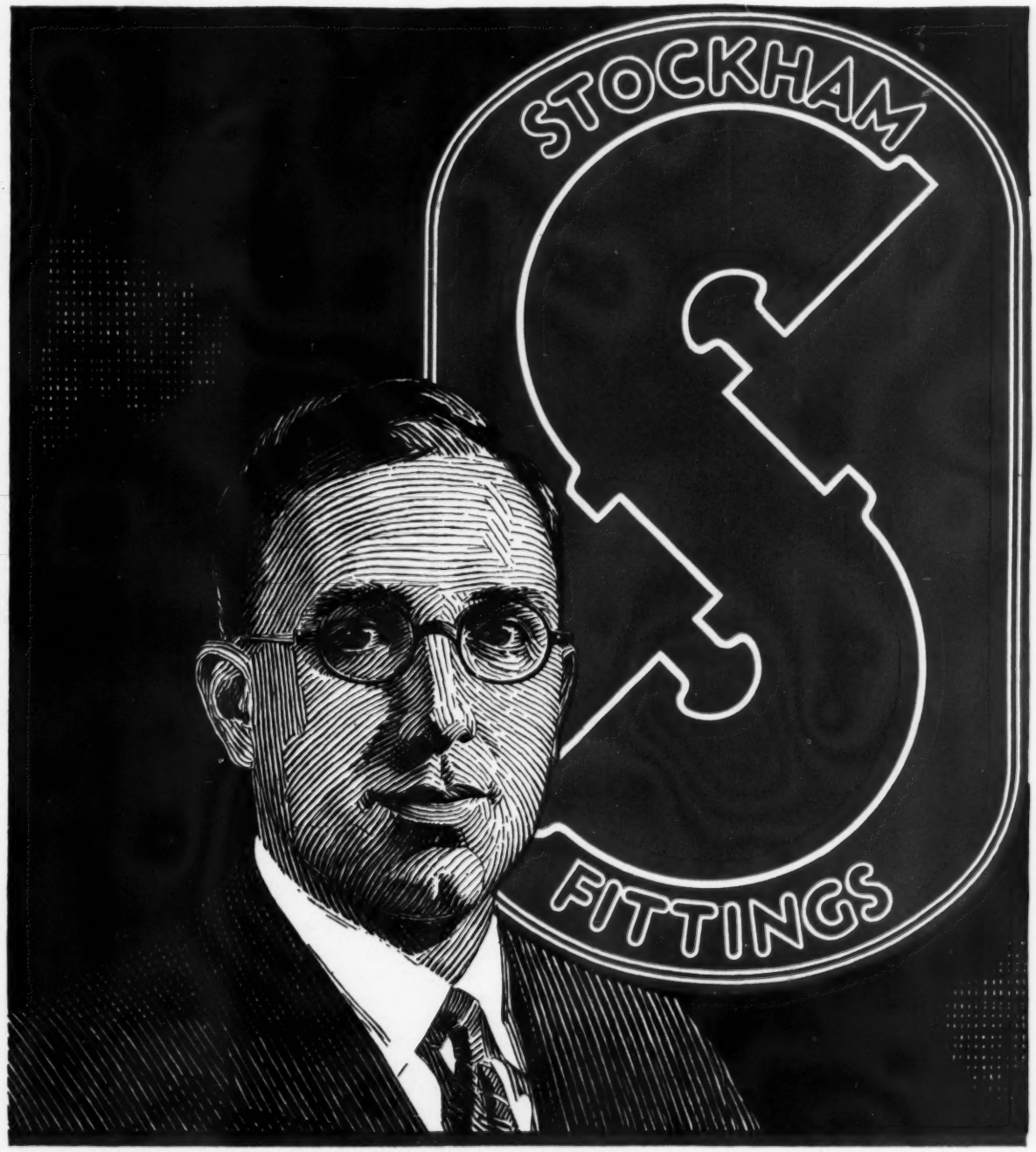
But the greatest expansion in the company's history came during the next decade, 1915-1925. The Chicago Works had been completed; the Montreal works were put in operation; Crane Export Corporation, Crane Limited, Canada; Crane-Bennett Limited, England; Cie. Crane, France and Belgium, were organized. Potteries were established at Trenton and Quebec; enameled iron works were built at Chattanooga. Branch houses, sales offices, warehouses, exhibit rooms, etc., were increased from 46 to 150, and the number of employes had increased to 17,000.

The five year period ending in 1930 reveals an increase in number of branch houses, sales offices, warehouses, exhibit rooms, etc., from 150 to 196. All manufacturing in Chicago consolidated at the Chicago Works. A new malleable iron plant was completed; the Bridgeport division was enlarged for the production of boilers and radiators; another plant was acquired in Montreal for the production of boilers and radiators; a radiator plant near Buffalo was acquired; the Trenton potteries plant was enlarged; new works were built in Paris and Ipswich, England. The number of employes had increased to 20,540.

It is unique that this organization began when the young mechanic in Chicago hung above his work bench in the little frame shack this creed: "I am resolved to conduct my business in the strictest honesty and fairness; to avoid all deception and trickery; to deal fairly with both customers and competitors; to be liberal and just toward employes; and to put my whole mind on the business."

This creed was not simply a set of words. It was a statement of faith in which the young business man believed implicity, and which became the law by which every subsequent policy of the company has been tested.

How great an influence for good these policies have been is indicated by the fact that one out of four of the employes is a stockholder in the company; that one out of four is a home owner; that one in four



IN these days when modern demands necessitate tremendous production and widespread distribution—people sometimes forget that the merit of any product finally depends on how sincerely one man has worked —for another. Machinery can sometimes destroy, but never replace, the human element.

The service possible through quality fittings, properly distributed, was first visioned by our founder. His son, Herbert C. Stockham, present head of the organization, carries forward into today's increasing complexities the same simple formula that the measure of true quality is how sincerely one man has worked —for another. The name Stockham on a pipe fitting is at once an acknowledgment of obligation, and guarantee of fulfillment.

STOCKHAM PIPE & FITTINGS CO., *Birmingham, Ala.*

Photograph of Crane Co. banquet at Stevens hotel, Chicago, during celebration of the company's 75th anniversary, attended by 1,000 veteran employes

has been with the company from ten to fifty-nine years.

How great an influence the employes have had on the success of the company can be measured by the fact that the 17 directors average 34 years each in the service of Crane Co.; the 20 officials average 32 years of service; the 36 shop department managers average 20 years; superintendents and assistant superintendents average 28 years; office department managers average 18 years; foremen average 27 years; assistant foremen average 21 years.

Of the physical growth of the company, the following statistics give an idea: Factories are located in nine cities of the United States, Canada and England. They cover a land area of 375 acres and a floor area of 147 acres. Branches and sales offices number 196, located in the United States, Canada, Great Britain, France, Belgium, India, Burma, Ceylon, Mexico, Cuba, Brazil.

When it is remembered that this has grown from a tiny building erected largely with his own hands by a young man of 23 years seventy-five years ago; that in the small brass furnace which was the parent of the great electric furnaces now used, he made his own first castings; that he was then the entire working force of the factory; something of the full meaning of his accomplishment is glimpsed.

Something of the changes in the world and in life that Crane Co. and its employes, working with architects, plumbing and heating contractors, and industrial engineers, have shared in bringing about, and which lends significance to their celebration is glimpsed from a comparison of a large city of today with R. T. Crane's picture of the Chicago that he reached in the spring of 1855:

"The pump used for supplying Chicago with water consisted of a home-made horizontal engine of about 50 horsepower, with a pump attached. It was located at Chicago avenue and the lake, and for a long time took the water from the shore.

"The intake was protected by a wire screen, to keep out fish. Often this was choked by small fish that came up in great numbers. A considerable number of these fish would get through the screen and the pump into the mains, and stop up supply pipes in houses. It was necessary to call a plumber to supply a pump in order to force the fish back into the mains. A pump for this purpose was an essential part of a plumber's equipment.

"To prevent this difficulty, I devised what might be called a fish trap, consisting of an iron box with a screen across the end. Fish would stop there, instead of going into the smaller house pipes."

This was perhaps the earliest of the innumerable improvements introduced by Mr. Crane and his company in the field of plumbing and piping. Those developed since have brought comfort and health in reach of all homes.

The official body that now guides the destinies of Crane Co. consists of R. T. Crane, Jr., president; J. B. Berryman, first vice president; C. A. G. Wayman, vice president, manufacturing division; A. F. Gartz, Jr., vice president, manufacturing division; G. H. Periolat, assistant vice president, manufacturing division; C. D. Little, vice president, sales division; H. W. Seymour, vice president, sales division; C. R. Crane, II, vice president, sales division; W. J. Clark, vice president, real property; P. T. Kelly, vice president, finance division; R. B. Stiles, vice president, branch house division; D. G. Park, vice president, purchasing division; L. B. Peeples, vice president, Pacific Coast zone; W. Evensen, treasurer; J. H. Steiner, assistant treasurer; R. O. Samuelson, assistant treasurer; H. P. Bishop, secretary; J. S. Bell, assistant secretary; J. K. Prentice, assistant secretary; J. A. Brough, assistant secretary.

◆

Mrs. Mary A. Ott Dies

Mrs. Mary A. Ott, widow of Henry Ott, one of the founders of Ahrens & Ott Mfg. Co., now merged with the American Radiator & Standard Sanitary Corp., died in Atlantic City, N. J., on June 23.

1,000,000 FURNACE COILS TO BE INSTALLED

Every Coil should be a GLOBE SIZZLER. They treble your Profits and Satisfied Customers

Packaged

The Globe Sizzler comes ready-made in different lengths, to fit all makes of furnaces. Each coil is packed in an individual carton, protecting threads and identifying size.

U. S. Patent No. 1649660

WITH the first cold snap, furnace heating coils will start going bad by the thousands. And before next April, over a million old coils will have to be replaced with new ones. Hundreds of these installations will be required right in your own community.

Probably you have found little or no profit in furnace coil installations during the past. But now, thanks to the Patented Globe Sizzler, you can make these jobs pay you real money. The Globe Sizzler costs but little more than the coils you make up but brings you about **three times the profit.** It saves time and labor because it is adjustable to variable water-pipe openings and can be installed in any furnace quickly and easily.

The Globe Sizzler is the only one-piece coil made 4-in. centers or less, providing circulation always in an upward or horizontal direction. It contains **no pockets** to clog or lime up, which assures free, noiseless flow of water at all times. Because of its greater heating surface, it **heats water hot** in less time. Write your jobber or write us today, for complete information about this better heating coil.

GLOBE MACHINERY & SUPPLY COMPANY
205 W. Court Ave., Des Moines, Iowa

GLOBE SIZZLER
THE ONE-PIECE NO-POCKET FURNACE COIL

GLOBE MACHINERY & SUPPLY COMPANY,
DES MOINES, IOWA

I am interested in eliminating the grief from furnace coil installations and in how to get more profit from them. Please send me complete information about the Globe Sizzler.

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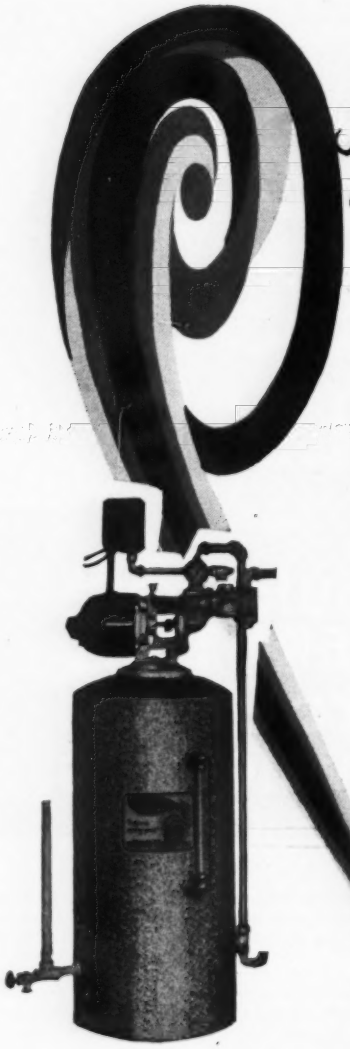
DE-7

If you sell the BURKS you sell the best



Series 8750
Complete Water System

A PUMP proves what it is by what it does.

Performance is tangible, definite—something that can easily be checked.

Performance is, after all, the vital thing.

Burks Pumps are away out in front, in a class by themselves when performance is considered.

In sheer simplicity, extreme suction lift, and general adaptability, the Burks recognizes no equal.

Once properly installed, you may reasonably expect uninterrupted service from a Burks.

New bulletins ready—Send today for your copy. New Water System Bulletin No. 90. Also new Condensation Bulletin No. 91.

DECATUR PUMP COMPANY
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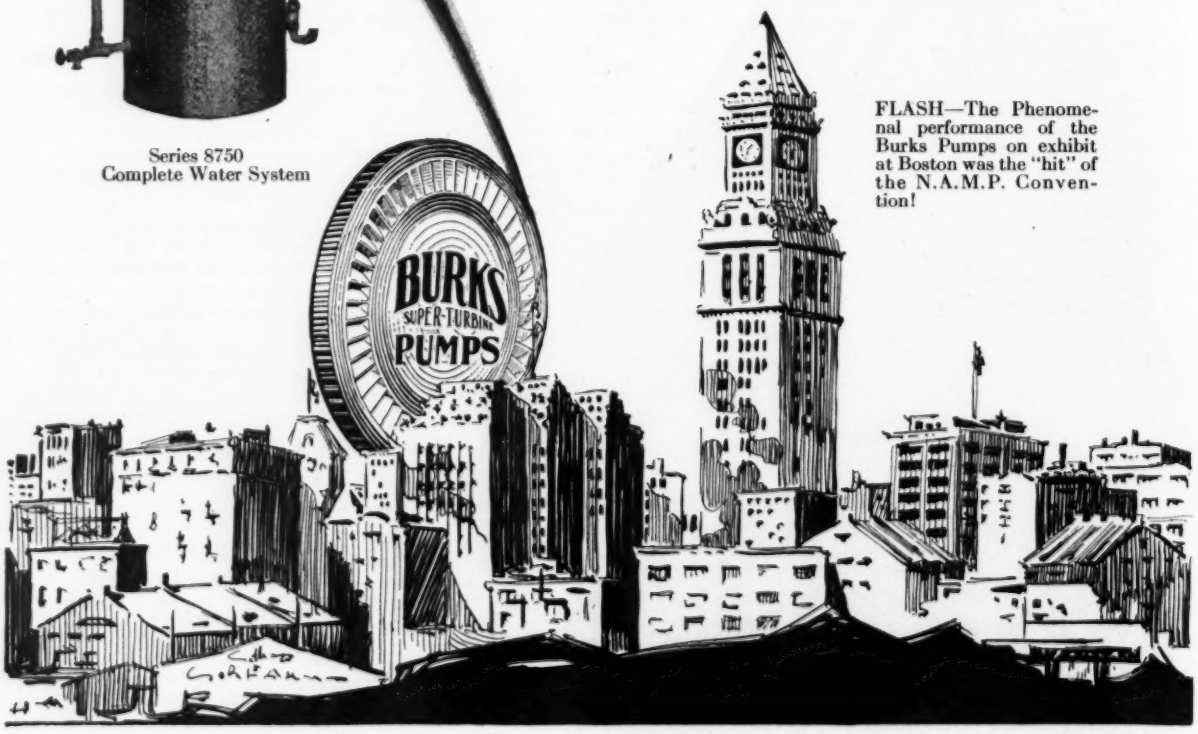


FLASH—The Phenomenal performance of the Burks Pumps on exhibit at Boston was the "hit" of the N.A.M.P. Convention!

Plumbing & Heating Club of San Francisco Plays Ingleside Course

Getting away to an early start and with a turnout that amounted to almost a record attendance, the golfing section of the Plumbing and Heating Club of San Francisco and the Bay Cities got together at the Ingleside course, San Francisco, Calif., on the afternoon of June 12 for their fifty-fifth monthly tournament.

There were no phenomenal scores turned in; on the contrary, some of the club's most consistent golfers failed to equal their usual form. Nevertheless, F. M. Gabbert, William Rowe and J. V. Young did some clean driving, while Al. Somerton, Robert Allmon and Charles Higgins had their putting well in hand.

Class A honors went to Walter Seitz, who shot a net 69; William Turner came through with a 71 to cop the B division trophy; and Clarence Drucker breezed in with a 69 to claim distinction among the D-class players. C division developed two favorites—Martin Doerr and A. G. Atwood, who both shot a low net of 68. This tie will be decided at the next regular tournament.

Unless strong representations to that effect are made to President Young, who is himself one of the most ardent golfers in the organization, the Plumbing and Heating Club will omit the July tourney, due to the approach of the vacation season.

Among the scores turned in were the following:

Name	G.	H.	N.	Name	G.	H.	N.
Wilson	92	17	75	Heymans	105	26	79
Lawson	96	22	74	Morse	124	39	85
Turner, Wm.	90	19	71	Turner, D.	98	28	70
Brown	102	Guest		Ceasar	109	26	83
Maryon	104	Guest		Rainwater	101	26	75
Doerr	94	26	68	Seitz	87	18	69
Camp	98	18	80	Somerton	101	28	73
Vigus	92	19	73	Gabbert	100	21	79
Swan	85	Guest		Blair	97	26	71
Anderson	91	17	74	Clark	96	23	73
Blackburn	111	Guest		Forsythe	106	27	79
Drucker	105	36	69	Rowe	93	17	76
Lees	88	15	73	McLeod	91	18	73
Young	89	10	79	Higgins	106	29	77
Hope	106	Guest		Phelan	98	Guest	
Atwood	95	27	68	Allmon	90	18	72

◆

Prof. William Henry Bristol

Prof. William Henry Bristol, president of the Bristol Co., Waterbury, Conn., died June 18 at the New Haven (Conn.) Hospital of heart trouble. Prof. Bristol was famous internationally for his many valuable inventions.

Prof. Bristol was in his 71st year and a native of Naugatuck, Conn. He finished his technical education at the Stevens Institute of Technology, Hoboken, N. J., being graduated as a mechanical engineer in 1884. Prof. Bristol organized the Bristol Company in 1899, which has manufactured his many inventions since that time. Many of its products are now used extensively in the heating industry.

Mr. Bristol was a member of the American Society of Mechanical Engineers, the Society of Electro-Chemical Engineers, Society of Motion Picture Engineers and the American Institute of Electrical Engineers. He was also a fellow of the American Association for the Advancement of Science. Two brothers and one sister survive.

BREEZO FIN
UNIT HEATERS
Breezo-Fin Unit Heaters have many characteristics that lift them out of the "ordinary" class of heating equipment.
Of paramount importance among these are the ease with which they may be installed and the wide variety of sizes in which these heaters are made.
These two factors simply mean that you cannot only figure a heating job with greater accuracy, but after it is figured install and have it running in much less time.
Investigate the possibilities of Breezo-Fin Unit Heaters as they apply to your own particular business.
Write us for complete information
BUFFALO FORGE COMPANY
483 Broadway :: Buffalo, N. Y.
In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ontario

N. A. M. P. Convention

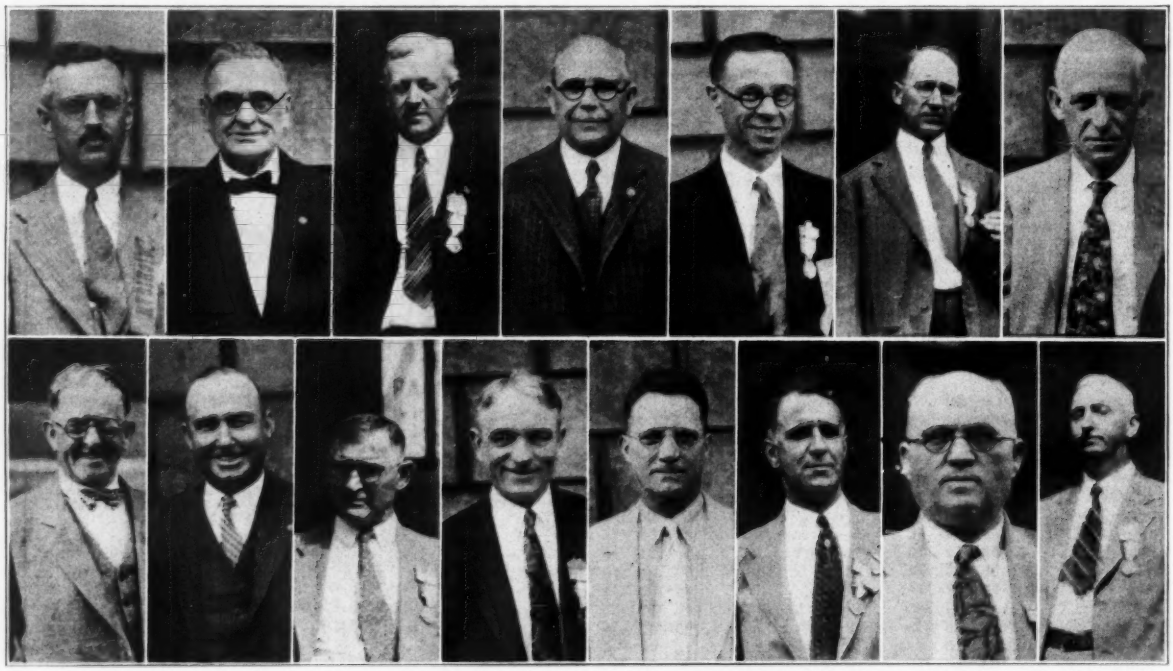
(Continued from Page 58)

lution, as it considered the situation a local one and that it should be treated as such. Upon conclusion of the discussion of the resolution the convention did not agree with the action of the committee and the resolution was carried by a motion from the floor.

The twenty-second resolution was withdrawn.

Resolution No. 23, submitted by the board of directors, suggested that the chairman of the convention committee in connection with the yearly exhibit be bonded in a sum association. The resolutions committee pointed out that according to the by-laws it was within the province of the board of directors to make that recommendation, and the committee moved that the matter be referred to the incoming board. The convention adopted the committee's recommendation.

The twenty-sixth resolution was to the effect that the incoming board of directors appoint a committee to consult with manufacturers of plumbing and heating mate-



B. Wigle, Detroit; E. D. Hornbrook, past national president, Kansas City, Mo.; F. E. Darling, Fall River, Mass.; Samuel F. Wilson, Newark, N. J., past national president; Henry J. Ritter, Buffalo, N. Y.; H. L. Stilwell, Philadelphia, Pa.; J. G. Hayes, Indianapolis, Ind. Bottom row: Frank B. Lasette, past national president, New York City; Henry E. Longley, past national president, Wilmington, N. C.; C. W. Wilson, Youngstown, O.; John Vogelpohl, past national president, Cincinnati, O.; E. B. Kleine, state vice president, Cincinnati, O.; Rupert J. Weber, president, Chicago association; W. S. Loftis, Atlanta, Ga.; R. T. Rock, Bridgeport, Conn.

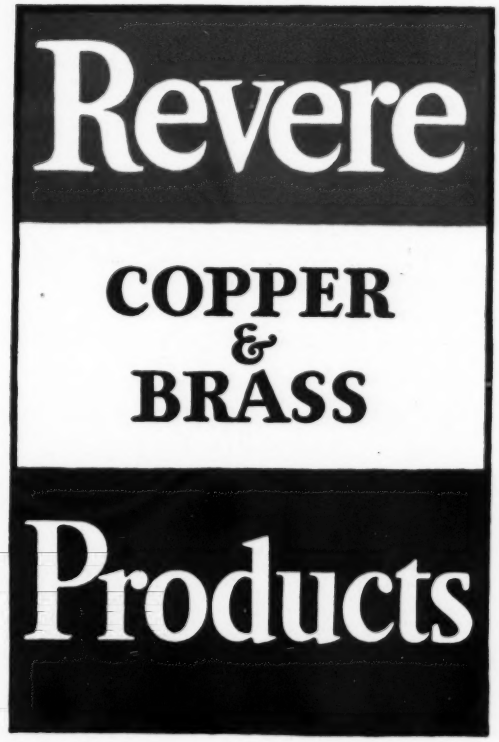
to be decided upon by the board. The committee and the convention adopted the recommendation.

The Tennessee association introduced the twenty-fourth resolution. Its sense was that, inasmuch as progress made it necessary to adopt some kind of a time payment plan, and inasmuch as it was sometimes difficult for a contractor to identify a fixture, the national body was asked to request that manufacturers of plumbing fixtures mark their products with a serial number or other individual mark of identification. The resolutions committee concurred and suggested that the matter be referred to the incoming board. In this the convention agreed.

Resolution No. 25, from the Michigan association, petitioned the national association to nominate and recommend for honorary membership William A. Decker of Grand Rapids, Mich., a past director of the national association, for his untiring efforts on behalf of the rials, with a view to establishing a testing laboratory so that all products may be tested and stamped with its approval in order that the contractor may be guaranteed that material so stamped will meet any requirement of plumbing and heating installations. The resolutions committee concurred in the recommendation and suggested the reference of the matter to the standardization committee. In this the convention agreed.

Scholarship Fund Completed

ONE milepost in the constructive work of the association was passed during the year by the completion of the $135,000 scholarship fund set up as the goal five years ago. Frank J. Fee of New York, who has been chairman of the scholarship committee, made a full and complete report of the committee's work to the convention. In his report, Mr. Fee pointed out that until the



All
Revere Products
marketed under this label

THE SEVEN PLANTS of Revere Copper and Brass Incorporated make a complete line of copper, brass and bronze products of finest quality.

All Revere products will be marketed under the Revere red, white and blue label.

This label stands for reliability, responsibility and service. The Revere organization is the oldest, their copper mills, located at important industrial centers, are the largest, and their equipment is the most modern in this country.

SEVEN
REVERE PLANTS . . . . . *See next page* ➔

These 7 plants

1. Baltimore, Md. . . . Baltimore Copper Mills

2. Chicago, Ill. . . . Dallas Brass & Copper Co.

3. Detroit, Mich. . . . Higgins Brass & Manufacturing Co.

4. Detroit, Mich. . . . Michigan Copper & Brass Co.

5. New Bedford, Mass. . . . Taunton-New Bedford Copper Co.

6. Rome, N. Y. . . . Rome Brass & Copper Co.

7. Taunton, Mass. . . . Taunton-New Bedford Copper Co.

manufacture

Revere

COPPER *and* BRASS PRODUCTS

PAUL REVERE, in 1801, installed the first copper rolling mill in this country, which was operated by Paul Revere and Son. In 1828, Paul Revere and Son, combining with James Davis and Son, brass founders, started a chain of consolidations which finally culminated in Revere Copper and Brass Incorporated. This organization now operates seven plants, comprising better than 25% of the copper, brass and bronze mill capacity in this country.

Revere Copper and Brass Incorporated
General Offices, Rome, N. Y.

national association had made arrangements with Carnegie Institute, it was impossible for the youths of the country to learn plumbing, heating or ventilating in any of the universities or colleges.

"Two outstanding events have characterized progress of the scholarship plan during the past year," said Mr. Fee's report, "the $135,000 set as our goal having been passed, and the five scholarship students entered in 1926 having graduated from the plumbing, heating and ventilating course at Carnegie Institute of Technology on June 10, 1930.

"As of June 19, 1929, the Scholarship Fund amounted to $112,869.60. Since that time the moneys on hand for scholarship purposes have increased by $22,830.40, making the total in the fund $135,700 as of June 19, 1930."

In order to appreciate the actual investment involved in connection with the plan, Mr. Fee said that in addition to the money already mentioned, the $100,000 donated by Mr. Ahrens for the establishment of the professorship must be remembered, and the $64,500 invested by the Institute, making a total investment in cash of $300,200.

In the Column at the Right

Some of the exhibits at the convention, from top to bottom: Standard Tank & Seat Co., Camden, N. J.; Trenton Potteries Co., Trenton, N. J.; Blue Seal Chemical Co., Roselle, N. J.; Speakman Co., Wilmington, Del.; Revere Copper & Brass, Inc., New York City

The report referred to a certified financial report which was appended and in explanation pointed out that the money in the fund is invested in guaranteed mortgage certificates earning five and one-half per cent interest. In view of the completion of the fund, there was offered with the report a form of trust contract with a New York bank.

The five scholarship students who were graduated on June 10 were: William Francis Henderson, Jr., Gary, Ind.; Louis Sohrn Nielsen, Brooklyn, N. Y.; Clayton Herman Reichenbach, Waterbury, Conn.; Charles A. McMunn, Jr., Clarksburg, W. Va., and Chester Wallace Armstrong, Manatee, Fla.

Those nominated to enjoy the benefits of the scholarship fund during the coming year are: Louis Karges of Kansas City, Mo.; John Bensen of St. Cloud, Minn., and Neal L. Vinson of Bisbee, Ariz.

In his report, and speaking at a later time, Mr. Fee asked for generous consideration, for the boys who were graduated, at the hands of master plumbers. It was the intention, he said, that they should seek work in plumbing and heating shops during the summer months, and he requested that in any community where they might apply they be given every consideration. It was the plan of the committee also that the boys should rotate through towns and cities of various sizes, in order that they might round out their training by experience of a varied nature.

Commenting on the completion of the task, Mr. Fee said: "Our accomplishment has exceeded our brightest expectations. We hoped to complete the fund in ten

or fifteen years, but here in something less than five years the total amount has been secured and invested. In submitting my report to President Drake yesterday, in view of the realization of the amount we started out to reach, I asked that, in fairness to myself, he relieve me after this year." Mr. Fee then read a letter from the auditors who had gone over the records of the committee, certifying them to be correct.

Robert H. Pflug-Felder of Philadelphia, as chairman of the convention's auditing committee, in reporting its findings, expressed the committee's keen satisfaction over the manner in which the records had been kept and, particularly, over the nature of the investments which had been chosen.

During the proceedings of the convention, Mrs. H. H. Diedesch of Chicago was introduced, that she might offer to President Drake a check for $1,900 from the Illinois auxiliary. "What Illinois promises," said Mrs. Diedesch, "Illinois does. We have worked for four years to complete the scholarship fund, and I take great pleasure in turning over to the scholarship committee $1,900 from Illinois."

In acknowledging the contribution, President Drake said: "As the scholarship fund has been completed, it will no longer be an active part of the national's work, but voluntary contributions will be gladly accepted. They will be used to take care of the boys in the way of expenses which they may incur in addition to the sum which now pays the tuition and dormitory charge at the Carnegie Institute."

The ladies of Illinois were accorded a vote of thanks; and for the work of Mr. Fee and his committee the convention accorded a rising vote of thanks and appreciation.

Following Mr. Fee's request that consideration be shown the boys who have been graduated from Carnegie, E. J. Harringon of Phoenix, Ariz., president of the newly formed association in that state, took the platform to say: "I wish to take the time to thank the board of directors which appointed one of these boys as a student.

Top row: J. P. Rielly, New Bedford, Mass.; John M. Forger, Norwalk, Conn.; F. C. Ruty, Stamford, Conn.; J. Berger, Bridgeport, Conn.; Walter Tesch, Milwaukee, Wis.; H. Morris, Racine, Wis.; S. V. Hanley and Jos. Wittig, both of Milwaukee; E. G. Byrd, field representative, Heating & Piping Contractors National Association, and Jos. C. Fitts, secretary; C. A. Bolton, secretary, Illinois association, Chicago Heights, Ill.; E. L. Flentje, manager, Plumbing & Heating Industries Bureau. Second row: Charles Brobdeck, William F. Cassidy and William P. Ryan, all of Albany, New York; L. S. Nielsen, Brooklyn, N. Y.; C. H. Reichenbach, Waterbury, Conn.; C. A. McMunn, Jr., Clarksburg, W. Va.; W. F. Henderson, Gary, Ind.; Prof. S. E. Dibble, Carnegie Institute of Technology; A. J. Schuh, Milwaukee, Wis.; L. P. Carter, Bar Harbor, Maine; Walter Dusold, president Milwaukee association, and E. J. Massino, both of Milwaukee, Wis.; George F. Reeke, Green Bay, Wis. Third row: J. H. Daniels, Gary, Ind.; R. M. Cotton, Mr. and Mrs. F. E. Irish, Mrs. R. M. Cotton, all of Indianapolis, Ind.; Mrs. J. H. Daniels, Gary; George McKnight, Clinton, Mass.; A. D. Burger and W. R. Seestadt, both of Louisville, Ky.; Peter Maitland, Clinton, Mass.; R. A. Layer, Louisville, Ky.; Robert J. Barrett, Frank Bentley, secretary, S. Tapp, D. H. Alsop, Frank A. Kerr, president, all of Washington, D. C. Association; E. J. Blake, secretary of St. Louis, Mo., Association. Fourth row: C. R. Oldenberg, Detroit, Mich.; C. W. Weitzel, Wilton, Conn.; A. C. Hughes, Norwalk, Conn.; J. F. Graham, Detroit, Mich.; J. E. Ramage and Robert A. Jack, both of "Domestic Engineering"; Joseph Brah, Milwaukee, Wis.; D. H. Osborn, Beloit, Wis.; Charles Heffling, Milwaukee, Wis.; Ernest J. Bossard, president, St. Paul, Minn., association; H. C. Ridler, local president, Minneapolis, Minn. Bottom row: John J. Corcoran and J. J. Sharrock, both of Jersey City, N. J.; H. N. Sprenkle, Detroit, Mich.; C. F. Troutwine, York, Pa.; E. H. Brown and George Moore, both of Milford, N. H.; William D. Melville and C. G. Perry, president Los Angeles association, both of Los Angeles, Calif.; J. H. Crump and S. E. Scholze, Jr., both of Birmingham, Ala.; William A. Crowley, Peoria, Ill.

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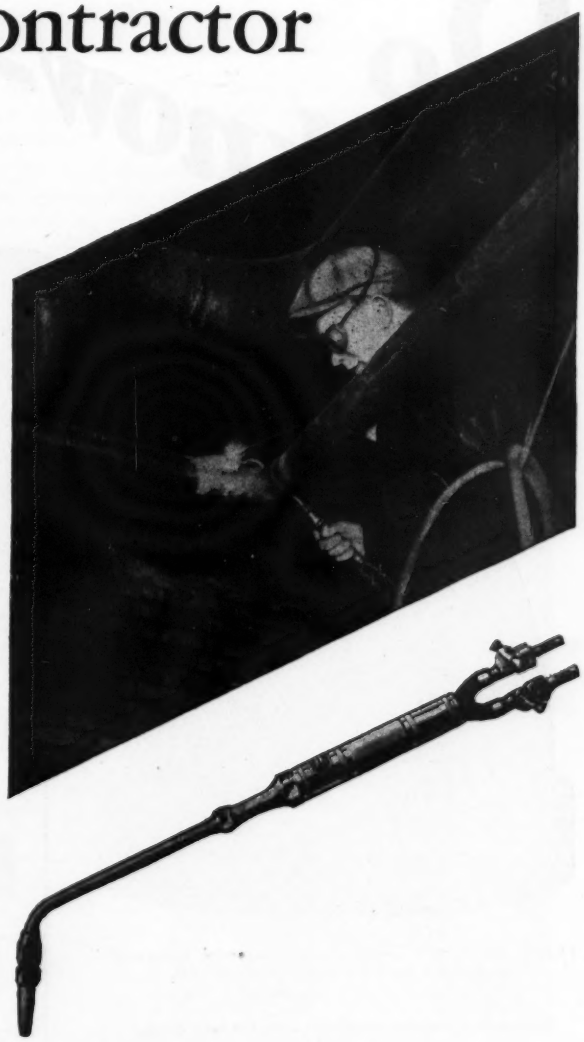

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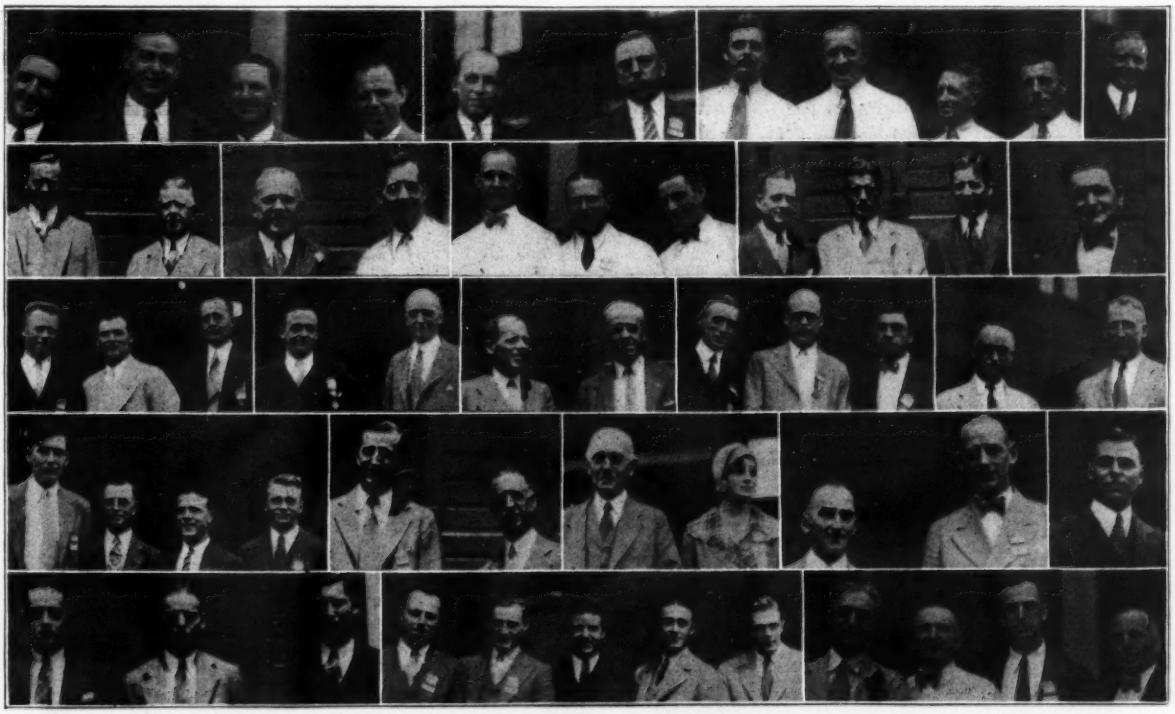
Other Committee Reports

FOLLOWING the Buffalo convention last year, a special committee on trade practices, with Past President Henry E. Longley of Wilmington, N. C., as chairman, was appointed to work with a similar committee of members of the Heating and Piping Contractors National Association. The report of this joint committee was printed and distributed at the convention. Referring to it, Mr. Longley said: "This committee has held two meetings during the year and in addition the chairman has attended trade conferences, one in Philadelphia and another in Washington, D. C.

"We want to recommend that a similar committee to this one, or one of our standing committees, meet with a like committee of the heating men at least once a year for the purpose of jointly discussing the contractor's problems."

The resolution accompanying the report recommended the approval of the rules and that a committee be appointed to present the suggested rules to the federal trade commission and petition for a conference for their consideration. The resolutions committee, having concurred in the recommendation, the convention voted to approve the rules as decided upon by the joint committee and to petition the federal trade commission for a conference.

Following the approval of the report, Mr. Longley



Top row: E. W. Hayden, F. B. Rhodes, D. L. Kahl and M. K. Douglas, all of American Radiator Co., New York; G. B. Gerrish and E. R. Shequine, both of Kewanee Boiler Co. of New York; R. C. Wanger, S. N. Tomlinson, Sam Keatley, R. H. Newsbaur, all of Woodward-Wanger Co., Philadelphia; H. C. Dodge, National Radiator Corp. Second row: P. R. Berryman and George E. Stevens, both of Trenton Potteries Co., Trenton; J. H. Conant and A. L. Gustafson, both of Holyoke Heater Co., Holyoke, Mass.; H. C. Palmer, F. A. LaBaw and J. J. Downey, all of Standard Tank & Sent Co., Camden, N. J.; C. C. Gray, D. D. Hamilton, J. B. Banks, all of B. F. Sturtevant Co., Boston; Charles M. S. Foster, "X" Laboratories, New York City. Third row: H. Kelso, W. F. Murphy and J. E. Lukens, all of Beaton & Cadwell Mfg. Co., New Britain; W. D. Jamieson, Rome Brass Radiator Corp.; Charles C. Hansen, manager, Condenser & Heater Division, Rome Brass Radiator Corp.; J. M. Denney and T. M. Dugan, National Tube Co., Pittsburgh, Pa.; Philip J. Faherty, vice president, Martin A. Rooney, vice president and general sales manager, Gene Mansenu, all of Pierce, Butler & Pierce Mfg. Corp., New York City; Arthur Hare, R. B. Dickson, vice president in charge of sales, Kewanee Boiler Corp., Kewanee, Ill. Fourth row: D. W. Tucker, W. M. Hall, A. H. Goepel, D. J. Scott, all of Scovill Mfg. Co., Plumbers' Brass Goods Division; W. D. Pinkham and Ted Henry, both of Malleable Iron Fittings Co., Branford, Conn.; H. M. Saunders and Mrs. J. M. Hefner, both of Barcham & Saunders, Rochester, N. Y.; Robert C. French and H. S. Peterson, both of Hays Mfg. Co., Erie, Pa.; J. M. Kohler. Bottom row: Rupert Young, Chas. R. Zimmerman and Richard C. Sickles, all of Bethlehem Steel Co.; H. G. Farnum and J. G. Knerner, both of Stockham Pipe & Fittings Co.; A. R. Glore, Evins F. Glore & Son, Inc., New York City; D. Henry Reis, W. A. Russell and Co.; W. A. Johnson, of Evins F. Glore & Son and W. A. Russell and Co.; P. W. Sharp, R. B. Williams, M. A. Prescott and John M. Higgins, all of H. B. Smith Co., Westfield, Mass.

said: "We have a recommendation from the Heating and Piping Contractors National Association, and it is a pleasure to give them credit for it.

Credit in the Heating Industry

1. The ability of the applicant for credit to furnish regular financial and operating statements.

2. The ability of the applicant for credit to operate his business successfully on a volume basis which is within the limits indicated by his capital and operating expense.

3. Possession by the applicant for credit of technical knowledge, craftsmanship, and business ability to execute successfully the various projects undertaken.

4. Habits of payment as shown by exchange of information between various sources of supply."

Apprenticeship Work

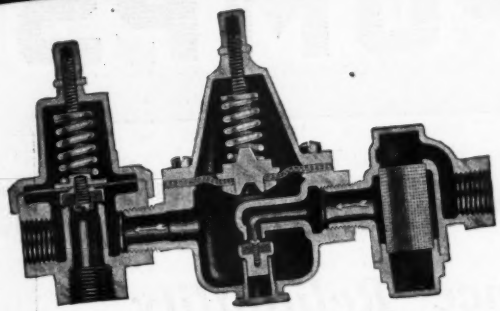
Reporting as chairman of the apprenticeship committee, Chairman John J. Shanahan of Norfolk, Va., pointed out that, due to the curtailment of the educational activities of the Plumbing and Heating Industries Bureau, the apprenticeship work has been seriously affected.

"The committee has done the best it could under the circumstances," the report read in part. "The text book issued through the Bureau was again placed in circulation after having been withdrawn for some time. Your chairman attended a conference of three engineering societies at Virginia Polytechnic Institute at Blacksburg, Va., April 26. He had the opportunity to see what extensive work is being done for apprenticeship training in other industries. He actively took part in this conference and feels that this group of engineers and the faculty of the V. P. I. have a better insight into the work of apprentice training than our industry."

At a conference between Mr. Shanahan, E. L. Flentje of the Bureau, S. Lewis Land, then educational consultant for the Bureau, and J. C. Fitts, then assistant secretary of the Heating and Piping Contractors National Association, certain conclusions were arrived at. Since the Bureau could not undertake an extensive educational program, the national association would have to initiate and promote its own educational and apprenticeship progress. It was agreed that the $500 appropriated for teacher training activities be left in the Bureau's treasury and be appropriated for the same purpose next year. The Bureau will continue to render such specialized consulting service as may be required and to handle a limited amount of correspondence.

The report concluded: "The matter of apprenticeship training is squarely before us. In an industrial world in which well trained men are essential, we must develop and perfect apprenticeship training. This committee recommends that either the Plumbing and Heating

Some of the exhibits at the convention. Top row, left to right: Standard Sanitary Mfg. Co., Pittsburgh, Pa.; Josam Mfg. Co., Michigan City, Ind. Middle row: W. A. Case & Son Mfg. Co., Buffalo, N. Y.; Smith & Wesson, Springfield, Mass. Bottom row: Kohler Co., Kohler, Wis.; Imperial Brass Mfg. Co., Chicago



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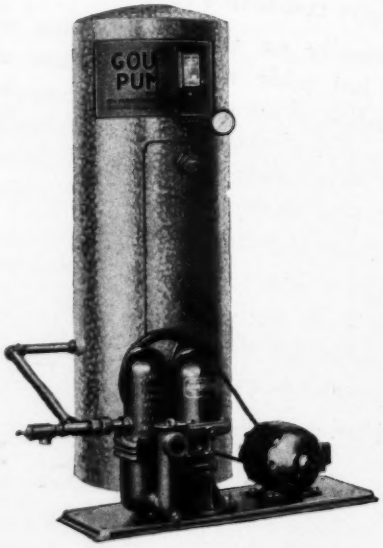

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Industries Bureau add to its educational activities or employ an all-time educational director whose duties shall in large measure be to put on an efficient apprenticeship training program where it is needed throughout the industry."

Report on Authorized Dealership

George W. Frank, chairman of the special committee appointed by President Quinn to study the "Authorized Dealership Plan" and carefully consider its possibilities, brought in the report for his committee. The committee had met in Detroit in January, where the plan is in operation. The report consisted of a stenographic record of the meeting in Detroit, which said, in part: "The entire country at the present time is experiencing one of the most critical conditions in the building industry. Not alone is our industry inactive, but the new economic methods of doing business, with the high cost of production, have created fictitious prices in building operations. Therefore, to stimulate business, we should adopt co-operative methods, but none with selfish motives, and we should not act hastily to endorse any plans until there is in sight such united co-operation with all branches of our industry as will benefit all, from manufacturer to journeyman. A survey should be made of facts and conditions relative to the interests of those concerned and report made."

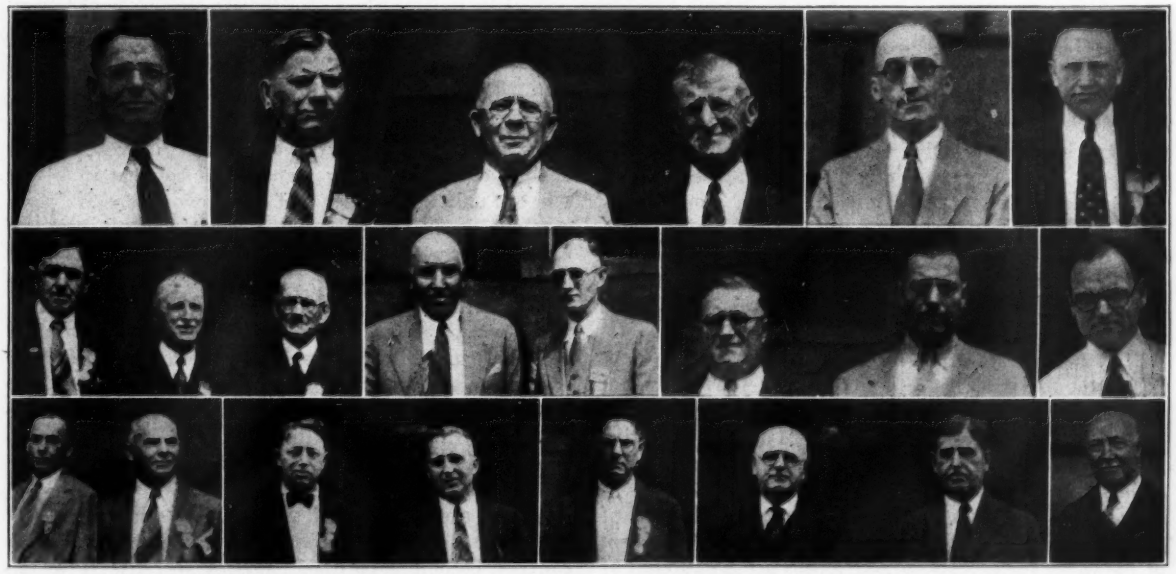
The committee recommended, therefore, that a committee of three be appointed by the president of the national association to study conditions in the industry. This recommendation, brought in favorably by the resolutions committee, was adopted by the convention.

Certified Plumbing Plan Approved

DURING the last session of the convention, an item was introduced into the program representing the conviction of the board that it contained an idea which ought to be made known to the members of the association. National Director Robert Murphy was called to the platform: "We of Chicago," he said, "have prepared a project called the 'Certified Plumbing' plan. As you know, some years ago the plan of certified heating came from the city of Chicago. It was taken up by the heating and piping contractors of the United States and has now become their national slogan for the betterment of the heating trade. We have had a committee working on this proposition. We have brought it to a point where we think it would be of benefit to the national association. We do not ask the convention to adopt this plan, but we do want to have it referred to the board of directors, they to give it the proper consideration and appropriate the necessary money to properly present the proposition to the association as a whole."

Mr. Murphy then introduced T. W. Merryman, a plumbing contractor of Chicago. Using charts to illustrate the nature of the plan and its advantages, Mr. Merryman said, in part:

"In the past four years we have been working on this plan on the theory that our industry is pulling away from economic control. We have here a chart which



Tow row: A. T. Papineau, Domestic Engineering; G. B. Grant and P. L. Guest, both of Atlanta, Ga.; S. S. Greenwood, Hawthorne, N. J.; C. J. Samuel, Montclair, N. J.; L. R. Schmaus, president of Plumbing and Heating Club, Milwaukee, Wis. Middle row: A. H. Wordell, Fall River, Mass.; M. J. Sullivan and J. W. Sullivan, both of Newport, R. I.; H. M. Hart, Chicago; C. D. Dunlop, Springfield, Mo.; A. A. Meyer and S. J. Timmermann, both of St. Louis, Mo.; L. W. Britton of "Domestic Engineering." Bottom row: F. J. Praechter and J. D. Els, both of St. Louis, Mo.; L. E. Stowell, Marion, Mass.; Walter Illig, Jennison Co., Fitchburg, Mass.; Percy R. Todd, Memphis, Tenn.; Daniel Loan, past state president, Worcester, Mass.; Andrew McGlynn, past state president, Taunton, Mass.; R. J. Welch, past national treasurer, Lowell, Mass.

Top row: C. A. Rifford, Henry P. Keegan, Otto D. Jentsch, all of Wolverine Brass Works, Grand Rapids, Mich.; R. E. Larson, sales manager, and W. C. Watson, both of Wolverine Brass Works, Grand Rapids, Mich.; A. F. Horn and E. H. Ruppert, both of Excelso Products Corp., Buffalo, N. Y.; H. S. Bard and D. N. Davin, both of Reading Iron Co., Reading, Pa.; F. A. Rodgers, L. W. Smith, Jr., L. A. Hagan, R. E. Cross, A. A. Troiani, William F. Arnoldy, all of Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Second row: R. F. Lyon, R. A. Witherell and W. G. O'Connor, all of C. F. Church Mfg. Co., Holyoke, Mass.; T. A. Rockett, Trenton Brass & Machine Co.; W. J. Burkert, secretary-treasurer, Trenton Brass & Machine Co.; W. L. Schulte, Trenton Brass & Machine Co., Trenton, N. J.; W. J. Spillane, Jas. B. Clow & Sons, Chicago; E. C. Regester, E. Neidecken and K. B. Gerrish, all of Hoffmann & Billings Mfg. Co., Milwuakee, Wis. Third row: F. A. Huntley, manager, plumbing department of Mueller Co., Decatur, Ill.; Charles Bray, Mueller Co., Decatur, Ill.; T. F. Leary, San Francisco manager of Mueller Co., Decatur; M. S. Curtis, E. E. Ellwood and Fred Egglestone, all of Youngstown Sheet & Tube Co., Youngstown, Ohio; R. W. Thompson, advertising manager, Reading Iron Co.; A. C. Hatch, A. L. O'Brien, H. K. Ryan, B. W. Erk, all of American Brass Co., Waterbury, Conn. Fourth row: Jack Falk and Henry Kenning, both of W. A. Case & Son Mfg. Co., Buffalo, N. Y.; C. H. Dahlquist and T. S. Dahlquist, both of Dahlquist Mfg. Co., South Boston; N. B. Decker, Bridgeport Brass Co., Boston; T. D. Burnham, Bridgeport Brass Co., Bridgeport, Conn.; E. O. Mansenu, Pierce, Butler & Pierce Mfg. Corp., Boston; L. M. Young, A. P. Relken and A. F. Schmidt, all of Mueller Brass Co., Port Huron, Mich. Bottom row: G. H. Rimbach and C. M. Rimbach, both of Waltham Oil Burner Corp., Waltham, Mass.; C. W. Good, Robert W. Wilson, Martin Weil, and Harry Welsh, all of Weil-McLain Co., Chicago; Charles G. Galbo, Walker Dishwasher Corp.; H. S. Murdock, L. F. Case, P. W. Taylor and R. F. Pease, all of Revere Copper & Brass, Inc., Rome, N. Y.; W. F. Selsmeyer, Kohler Co.

shows that 16 per cent of the homes now lack kitchen sinks; 17.8 per cent have no water closets; 28 per cent have no lavatories; 31 per cent have no bathtubs; 71 per cent have no laundry tubs. One hundred million dollars is spent for plumbing repairs and remodeling during the normal year. These people in these homes want sanitary plumbing equipment, but the trouble with them is that they also want automobiles, radios, electric washing machines, vacuum cleaners, and we of the plumbing industry have not been as aggressive as these others.

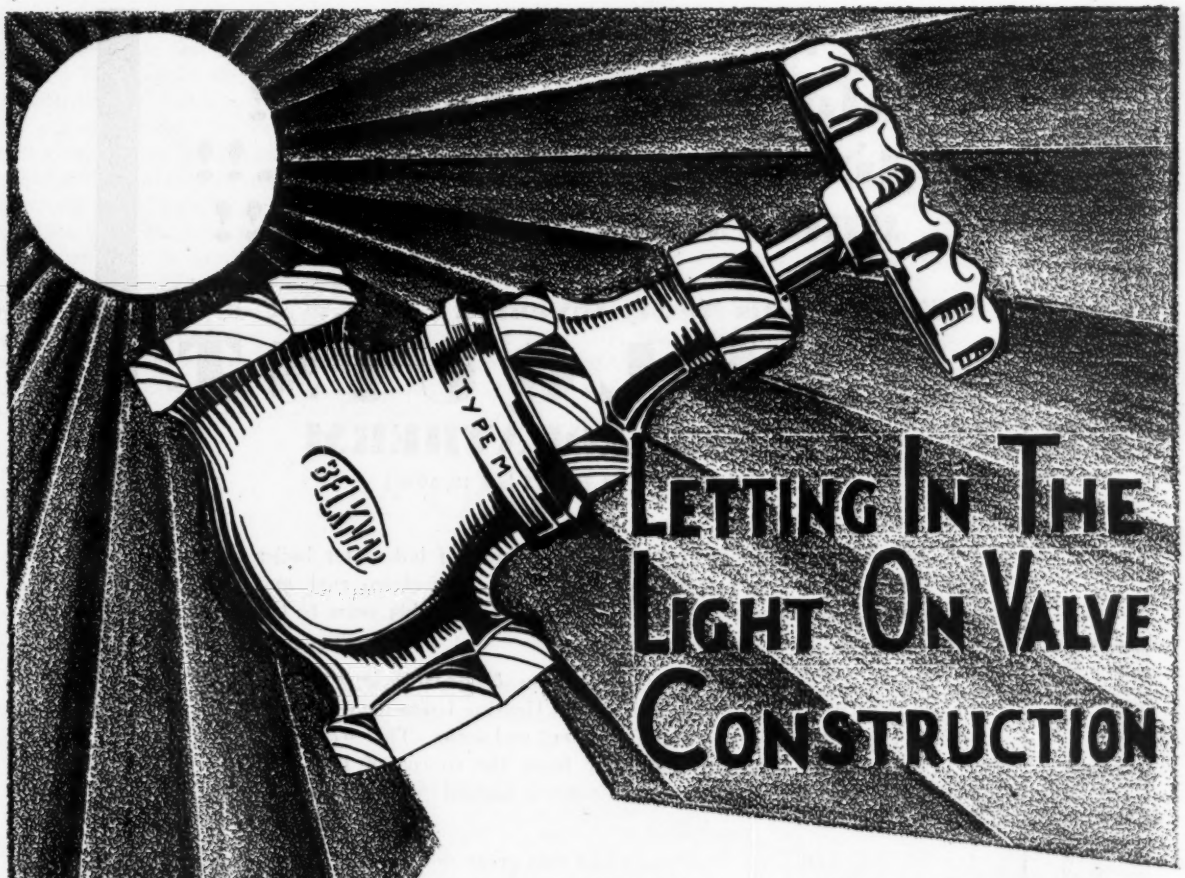
"Here is a chart which shows that the American public grants the plumber nine and three-tenths cents out of every building dollar spent during the year. There are only three other artisans granted a larger portion of that dollar. Our per capita wealth in this country is as high today as it ever was.

"Then look at these figures: Thirty-five per cent of the plumbing contractors in this industry do 77 per cent of the work. Nineteen and five-tenths per cent go out of business each year and do 9.5 per cent of the work. Now we have a larger group which includes 47 per cent of the whole, but who do only 13 per cent of the business done. Isn't it axiomatic that when a large group of plumbers divide only 13.5 per cent of the business they must resort to practices of chicanery in order to gain a living from their industry?

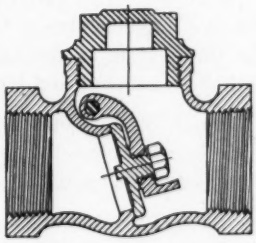
"The trouble with us is that this group has always been too large. We have gone along for years trying to drag everybody along with us. I say that if 47 per cent can only do 13.5 per cent of the work, and if 35 per cent can do 77 per cent of the work, there is going to be difficulty. How can we separate ourselves from that first group?

"We will offer the public a pledge—an installation which will be guaranteed in accordance with meritorious principles and fair business dealings. We will afford the contractor an identity in this association which will be worth dollars and cents to him. You will be able to offer a membership in this organization of certified plumbers as a means of attracting the attention of plumbers to it.

"There are five principles of certified plumbing: (1) Proper qualifications of master plumbers. Every plumber can not become a certified plumber, because if we allowed that we would defeat the purpose for which we are organized. We must separate in this industry the wolf from the sheep. (2) Uniform specifications. If you go to the public and acquaint that public with the fact that you have a uniform specification, we can build



LETTING IN THE LIGHT ON VALVE CONSTRUCTION



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Expertly Designed
Precision Built

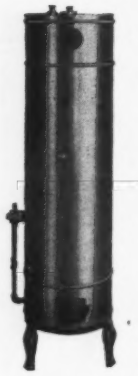
Being a later achievement of Belknap engineers, the design of this valve has had the benefit of long experience in fine valve making. The raised brass seat, the carefully machined axis and clapper, the self-aligning disc combine to assure unfailing performance and long life. Like other Belknap valves it is made of enduring Red Bronze and is twice tested at pressures above rated capacity.

BELKNAP

Write for Detailed Information

THE BELKNAP MFG. COMPANY
BRIDGEPORT ∴ CONN.

67 Years of Valve Manufacture



SUPER-AQUATHERM Gas Under Fire

AUTOMATIC GAS UNIT with Side Arm

AUTOMATIC ELECTRIC UNIT

Here are

More Advantages..! Greater Efficiency..!! and Longer Life...!!!

Given by this Newly Invented .....

DAHLQUIST

TURBO-AQUATHERM

(U. S. Pat. No. 1,762,215 June 10, 1930)

A revolutionary achievement in the science of hot water boiler design. Gives a constant supply of fresh, ever-clean, rust and sediment free hot water at the lowest fuel cost. Adds years to the efficient life of the boiler.

For 50 years and more until the invention of the Dahlquist TURBO-AQUATHERM Hot Water Boilers and Heating Units have suffered from a gradual accumulation of sediment and scale. This accumulation gradually insulates the water from the source of heat and if allowed to remain eventually causes a burned-out boiler coil or waterback.

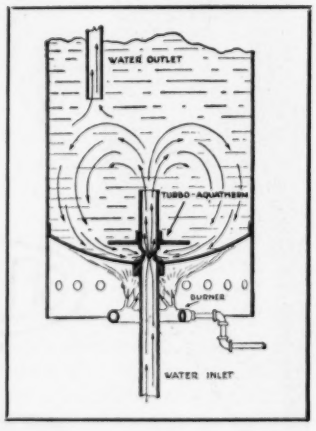
No way had been found to avoid this great detriment until the Dahlquist Company developed the TURBO-AQUATHERM, a simple and foolproof device which makes a turbulent circulation of water in the bottom of the boiler and prevents the accumulation of sediment and scale.

The accompanying diagram shows clearly the action of the water which actively scours the bottom of the boiler whenever the water faucet is open.

This simple device performs four vital and important functions: It prevents burnouts in boiler or heating unit. Keeps the water fresh so that it may be used for cooking as well as other household purposes. It greatly increases the thermal efficiency of the boiler and reduces the time required to secure a supply of heated water.

The TURBO-AQUATHERM can now be had on all Dahlquist copper range boilers and automatic storage systems. It adds little to the cost but pays tremendous returns in lower fuel bills, quicker hot water service and longer life.

Write for Full Particulars



Arrows show action of water when drawn thru TURBO-AQUATHERM, scouring bottom of boiler and preventing any accumulation of sediment.

Dahlquist Mfg. Co.

30 West 3rd Street **So. Boston, Mass., U. S. A.**

confidence with the public in our industry; (3) Advertising will give a new awareness in higher standards of living. The people elect to purchase some products immediately. Others, not so high in elective appeal, they put off buying; (4) Profit-making sales plan. We have a manual—a predetermined policy laid out for the sales force in other industries. We are efficient as far as our mechanical ability is concerned, but how can you expect a man in these days of high specialization to become efficient in every phase of the business? By having profit-making plans we can teach him to lay out the methods by which he should attempt to make his sales. We will be bringing him something tangible for the money he pays into his local association and national association; (5) We have a bonded guarantee, so that we can create a preferential desire for plumbing installations, all of which would be indicated by that term: 'Certified Plumbing'."

Mr. Merryman then went into the details of the sales and management plans, some of which have already been published in the pages of DOMESTIC ENGINEERING, and the methods by which membership would be handled under the plan. At the conclusion of his address, Mr. Merryman said: "This plan will bring an identity to your national association which will be of the greatest assistance in increasing membership. It will increase your membership and we will not have lost five or six hundred members in one year."

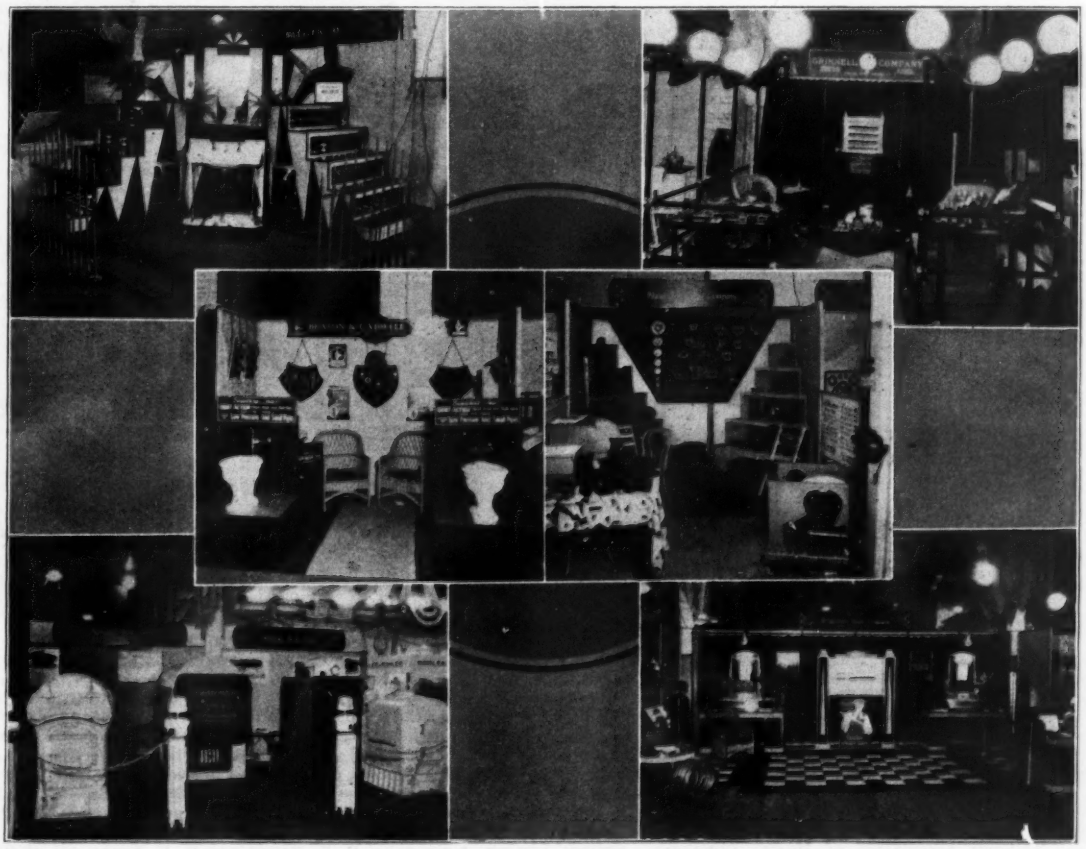
It was unanimously agreed that the plan be referred to the board of directors of the National Association of Master Plumbers for the consideration indicated by Mr. Murphy in his address.

The Opening Session

A PARADE from the Hotel Statler to the convention hall on Tuesday morning, in which delegates, their families, guests and exhibitors marched, was the first of the preliminary ceremonies preceding the opening of the forty-eighth annual meeting.

Facing a microphone on a platform before a gathering that packed the spacious convention hall, Albert E. Roberts, president of the Boston association, delivered the speech of welcome and formally introduced President Drake. A gavel and a bouquet of roses were presented to President Drake by Mr. Roberts as coming from the Boston organization.

Hon. Frank G. Allen, governor of Massachusetts, and Hon. James M. Curley, mayor of Boston, both scheduled to address the convention, were unable to appear, but each sent his emissary to express his regrets. J. F.



Displays at N. A. M. P. exposition. Top row, left to right: Mueller Co., Decatur, Ill.; Grinnell Co., Providence, R. I. Middle row: The Benton & Cadwell Mfg. Co., New Britain, Conn.; Blake Specialty Co., Rock Island, Ill. Bottom row: Kewanee Boiler Corp., Kewanee, Ill.; American Brass Co., Waterbury, Conn.

Mullins, offering this expression for the latter, gave the opinion that everyone should be interested in the strides plumbing has made during the last fifty years, as it is one of the oldest arts. He also mentioned the efforts that are being made to establish it as one of the engineering courses in Massachusetts Institute of Technology.

Charles M. Swinnerton of Los Angeles, responding, thanked the speakers and, touching upon the responsibility of the master plumber to the people of the nation, said: "We are gathered in convention for the basic purpose of discussing ways and means of preserving the health of the people of this great country, to keep in touch with the progress that has been made and the application of the developments in the industry."

Mrs. H. L. Rose, president of the Boston auxiliary, after Mrs. James F. Murphy of New Bedford, president of the Massachusetts State Auxiliary, had presented Mrs. Drake with a token of esteem, greeted the gathering, following which President Drake presented her with a bouquet of flowers from the National Association.

Mrs. W. E. McAndrew of Tampa, Fla., president of the National Auxiliary of Women, acknowledging the welcome expressed by Mrs. Rose, addressing the women present, said: "The auxiliary work is in its infancy. There is no limit to what may be accomplished, and we all should welcome the opportunity to be of service to the cause which is a part of the work of our husbands."

President Drake presented several of the visiting manufacturers and wholesalers. Theodore Ahrens, president of the American Radiator & Standard Sanitary Corp., New York City, after a few words of welcome, recalled that about forty-five years ago, as a master plumber in Louisville, Ky., he helped organize the association in that city, and touched upon the many changes that have taken place since those days. Mr. Ahrens, referring to the exhibits and the modern materials displayed, said that he felt the industry had arrived.

Charles R. Crane II of Crane Co., Chicago, pledged the support of his company to the master plumbers.

(Continued on Page 145)

Top row: R. J. Kennedy, C. A. Smith, F. C. Sweet, Harry Kennedy, all of New London, Conn.; J. J. McCue, St. Louis, Mo.; Mrs. and Mr. J. J. Lawler, Springfield, Mo.; C. A. Hjerpe, New Britain, Conn.; J. M. Gill, Waterbury, Conn.; A. A. Mills, New Britain, Connecticut; C. H. Knapp, Sound Beach, Connecticut; H. J. Parent, Lewiston, Maine. Second row: N. N. Moneypenny, New York City; Martin W. Utz, past state president, Rochester, New York; Fergus McLoughlin, past state president, New York City; A. D. Keir and A. P. Morrison, both of Springfield, Vt.; E. D. Winslow, vice president, and W. J. Osborn, both of Domestic Engineering. Third row: Charles Peck, Greenfield, Mass., past state president; Nelson Peck, Montpelier, Vt.; Allen W. Ham, W. B. Hubbard & Sons, Boston; Walter F. Lewis and F. J. Lord, both of Manchester, N. H.; J. E. Green, Mrs. J. E. Green, Donald Green, Dorothy Green, Edward Green and Mildred Green, all of Detroit, Mich.; F. W. Swanson, president National Plumbing and Heating Institute, Inc., Chicago. Fourth row: H. L. Schwan, Biloxi, Miss.; E. L. Hamilton and R. R. Hamilton, both of Gulfport, Miss.; T. W. Merryman, Chicago; H. M. Porter, Minneapolis, Minn.; George T. Noyes and Charles Noyes, of Presque Isle, Maine; F. J. Murphy, of St. Louis, Missouri; John F. Donovan, executive secretary, National Association of Master Plumbers. Bottom row: B. J. Bourque, R. E. Maher and O. H. Ramo, all of Riverside Boiler Works, Cambridge, Mass.; B. L. Ehrsam, state secretary, Utica, N. Y.; Lee Phillips, vice president of Florida Association, Lakeland, Fla.; John F. Rogers, treasurer, Greater New York Association, Flushing, Long Island; A. J. Murphy, Cincinnati, O.

The successful man has advertised consistently and steadily, week after week. He has planted the seeds of business success . . . . .

The plumbing and heating contractor is no exception to the rule that it pays to advertise. In fact, he should advertise more than many others.

Perhaps you have tried advertising once or twice, or several times, and decided that it didn't pay. No—advertising once or twice doesn't pay. But, advertise frequently and steadily and you will reap rich rewards. It pays.

"Domestic Engineering" recognized some time ago that the plumbing and heating contractor needed a continuous advertising service. "Domestic Engineering" acted and supplied that service—a professional service for practically no cost.

We offer you the "open sesame" to an increased volume in business. The entire campaign, newspaper ads, publicity items, educational leaflets, circulars, illustrations, sales letters and suggestions for window displays, all are planned and written for you. It is like the pot of gold at the rainbow's end, only the end of the rainbow has come to you. What more could you ask?

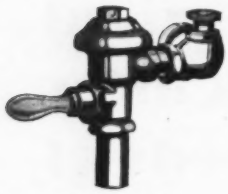
The cost of this service is $4.20 for twelve weeks. Every other week we send you two illustrations and a reprint of the page, which you have only to hand to your local newspaper. We simply charge you 35 cents for each cut.

Just clip off the corner of the page and mail to us attached to your letterhead, and your advertising worries cease to exist.

Retail Advertising Service

DOMESTIC ENGINEERING

1900 Prairie Avenue Chicago



Royal

The valve that can't be held open to waste water

ACHIEVEMENT

For over twenty years the Sloan Valve Company has been producing fine flush valves—and nothing else.

In these years of doing *ONE* thing — *and doing it well* — this organization has become the world's largest manufacturer of flush valves exclusively, with branches in the principal cities of North and South America, Europe, Asia, Africa, and Australia.

There is no conceivable use to which a flush valve can be put which is not provided for by one of the hundreds of Sloan Valves in either the Royal, Marine or Gem types.

Marine

The valve that handles "bad" water easily

There is no price range which does not include a full line of Sloan Flush Valves of unequalled design and workmanship.

And in the final test of leadership, Sloan Flush Valves exceed the combined sales of all other flush valves by a wide margin.

Success of this kind is not accidental. It is the reward of unusual merit and expresses the acceptance of Sloan Flush Valves as the universal standard.

SLOAN VALVE COMPANY

• Chicago •

Branches in all principal cities

Gem

The best valve in the low-priced field

The protection of the Sloan Syphon-Preventor is available to every purchaser of Sloan Flush Valves at no additional cost.

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

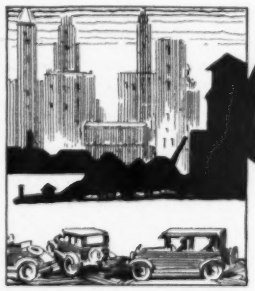
Master Plumber Consumption Holds Moderate

CONTRACTOR demand in the plumbing and heating market is proceeding at about the same moderate level as has characterized the last several weeks, according to reports from various jobbing centers of the country, with requirements for remodeling and replacement work making up a sizable part of the contractor orders to the wholesaler.

Manufacturers' salesmen, in most cases, continue to report that jobbers are buying only to fill in weak spots in their inventories and otherwise ordering for only near-at-hand requirements. Producers are carrying fair sized stocks, it is reported, and are handling all jobbers' commitments in a prompt manner.

Downward revisions in price sheets on brass pipe, drainage fittings and pottery have been announced by some makers. The pottery price reductions are on staple bowls and tanks only.

May shipments of vitreous-china plumbing fixtures, including all vitreous chinaware which in regular practice is connected with a drainage system, as reported by 26 manufacturers to the department of commerce, were 228,989 pieces, as compared with 240,113 pieces in April and 287,073 in May, 1929—May shipments of enameled sanitary ware, as reported to the department of commerce by 22 manufacturers, comprising practically the entire industry, totaled 242,382 pieces, as compared with 243,986 pieces in April and 342,620 pieces in May, 1929.



Central West

Demand Is Moderate

THE plumbing and heating contractor demand in the Central West territory, according to sources of supply interviewed since our last published review, is still lagging below the level of the volume usually characterizing this season of the year. The trend in building permits being issued has shown no marked inclination upward as yet, and remodeling is comprising much of the work now being done.

Both wholesalers and manufacturers are well equipped for present consumption requirements. The former do not experience any preference in demand for one commodity over another and are consequently maintaining only moderate sized stocks in all lines. Manufacturers' representatives continue to report that their sales are gained only through persistent calls on jobbers' purchasing departments.

Producers, as a rule, are in possession of ample working stocks and, as a result, wholesalers are experiencing no difficulty in securing material quickly for replacements. Makers, however, have limited their production schedules to a level commensurate with the general tone of demand.

Soil Pipe

Buying of this commodity is characterized by manufacturers' representatives as being of the close range variety and both jobbers and manufacturers speak of the demand as being considerably under the ordinary seasonal level. Prices are being firmly maintained by all interests and inventories at plants and wholesalers' warehouses are maintained at levels of sufficient size to offer prompt delivery of contractors' requirements.

Pipe—Steel and Wrought Iron

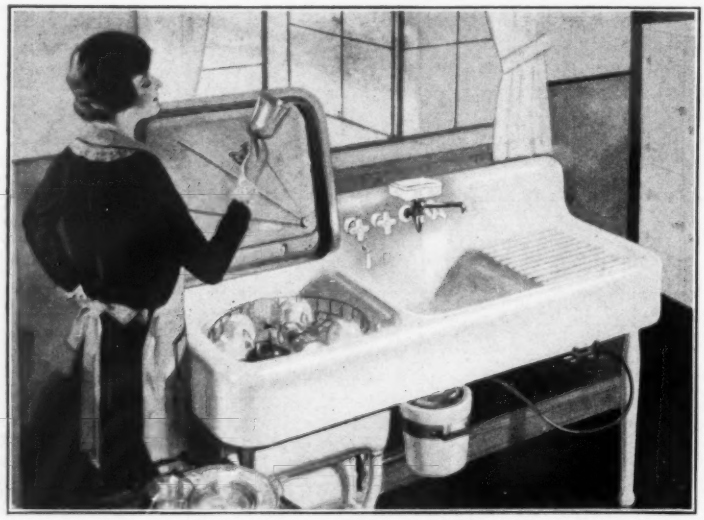
Some improvement in demand for steel pipe is reported by wholesalers, which is required mainly for replacement work in most cases. No change of price has been reported on either wrought iron or steel pipe. Manufacturers' representatives and jobbers report that the volume for the past sixty days is still below that of the same period last year. Deliveries from sources are satisfactorily executed in practically all instances and wholesalers are ordinarily meeting the demands of their customers in quick time.

Fittings

Contractor demand on all types of fittings, according to jobbers interviewed, has shown no great change during the past fortnight over the previous two-week period. This market on the whole has been just fair during the past two months. Unless buying for specific operations, jobbers are purchasing for fill-in purposes only, keeping just sufficient stocks to meet the near-at-hand requirements of the trade. Deliveries are being made on time, and no announcements of price changes had been received at the time of going to press.

Enameled Ware

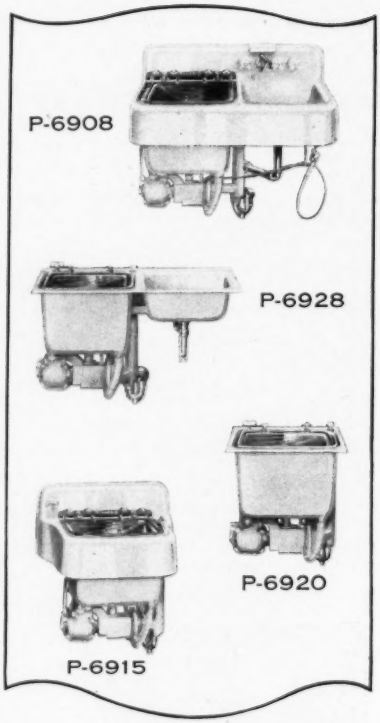
Some manufacturers' representatives interviewed state that jobbers have shown some inclination during the past few weeks to buy for future needs in this commodity in order to get the benefit of the recent reductions in makers' prices. Contractor



Replace the old sink with a new "Standard" Electric Dishwasher

The most appreciated labor-saving convenience for the home today is a mechanical dishwasher And this drudgery-eliminating machine is found in fewer modern homes than is any other home improvement device.

It opens up an unlimited market for you. In this period of modernizing, when your new construction jobs are not plentiful, you can find new and profitable business in practically every kitchen.



There is a "Standard" Dishwasher for every need. The P-6901, shown in the main illustration, and the P-6908, P-6928 types in the panel above, can be had with the dishwashing compartment at the opposite end also. Strong cast iron body, Acid-Resisting Enamel, water strained free of food particles and circulated under constant pressure over a slowly moving basket of dishes, rinse from the hot water line—these are the principal features of this time-tested, efficient Dishwasher.

The builders of the C & G Apartments, Columbus, Ohio, find that "Standard" Dishwashers have elevated these apartments out of a competitive-rental situation. Only 4% vacancies here compared to an average of 25% in the city.

Standard Sanitary Mfg. Co.
PITTSBURGH
DIVISION OF
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

"Standard" PLUMBING FIXTURES

needs for enameled ware continue to be only fair, much of their requirements being for modernization and replacement work, as comparatively little new work is being done in this section. Prices are unchanged and makers are able to give prompt shipment on all staple ware.

Pottery

There has been little change in the volume of pottery moving from wholesalers to contractors during the past fortnight, as compared with the preceding sixty days, according to interests interviewed. Some estimating and figuring for future work is reported, but repair and reinstallation work still constitute a large part of contractor activities. Potters are in position to make quick delivery on staple items, and no price sheet revisions have been reported.

Plumbers' Brass Goods

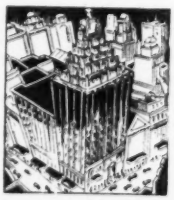
The master plumber demand for brass goods has been only seasonally fair in the Central West district. Wholesalers are reported reluctant, generally, to buy materials other than actually needed, keeping their inventories pared to the minimum. Producers, on the other hand, are keeping fair sized stocks on hand and are granting quick shipment on jobber commitments. Prices are unchanged.

Range Boilers

While installations of range boilers have been seasonally good, there has been no excessive tax on jobbers' stocks; and wholesalers' replacements have continued at a conservative pace. Makers' prices to their distributors are firm, according to sources of information. It is reported that the bulk of this commodity now moving into consumption is for remodeling work, which is maintaining a fairly steady volume. Shipments are moving without delay in most all cases.

Boilers and Radiators

Wholesalers are said to be coming into this market somewhat stronger in past weeks because of the recent downward revisions in price sheets on heating equipment. Heating installations are not numerous, yet there is a fairly good volume of combined residential and replacement work to grant contractors some improvement over the lethargic conditions which have obtained in the past two months. Factories and local warehouses of manufacturers are well equipped to care for present consumption requirements of the trade.



NEW YORK

Slight Gain Is Noted

THE usual first of the month increase in shipments from manufacturers to wholesalers gave some impetus to business activity during the past fortnight. It is reported that wholesalers are in the main buying against immediate requirements and are building up stocks on but few items. This is felt to be a healthy condition by manufacturers, inasmuch as it presages a speedy increase in manufacturing once consumer and contractor demand has reached normal proportions.

Credit conditions continue to show an improvement, according to most wholesalers interviewed. Manufacturers likewise report collections on a relatively better basis than they were earlier in the year.

Reports as to the margin of profit involved among wholesalers and manufacturers differ widely. It is said that on smaller operations, wholesalers are fairly rewarded on a service basis, but on the larger contracts profits are relatively unsatisfactory. Among some manufacturers, at least, it is reported that the lowered rate of operations does not allow satisfactory profits at current price levels.

In the outlying sections business is reported by several wholesalers as being lower than that of a year ago at this time, although there is some renovation work going on, accompanied by some demand for new country homes and seaside residences.

In the export field, some inquiries of size have developed during the past fortnight, and it is believed that specifications for a substantial amount of material will be placed within the next thirty days, notwithstanding unsettled conditions in various foreign countries.

Contract awards for new building and engineering work in the Metropolitan area of New York during the week from June 14 through June 20 were valued at $23,420,200, according to F. W. Dodge Corporation. This brought the June total to date to $59,632,200 and was at the rate of $3,516,000 per business day. In June of last year the daily rate of contract-letting was $3,392,000. For the year to date, construction contracts in this area amounted to $491,910,100, as against $565,158,500 for the corresponding period of last year.

The past week's contract record showed the following distribution by classes: Public works and utilities, $8,239,100; commercial buildings, $7,122,900; residential buildings, $4,778,900; and educational buildings, $2,008,100. All other non-residential building contracts let during the week totaled $1,271,200.

Soil Pipe

The movement of cast iron pipe continues to be at a low ebb, according to most manufacturers interviewed. The requirements of contractors in the outlying areas is reported as being considerably below that of a year ago, while demand in the city proper is aided to a certain extent by a few large operations now under way. Inventories are at fair working levels among wholesalers and manufacturers and no delays are experienced in obtaining requirements. Prices of manufacturers and wholesalers are being firmly maintained.

Pipe—Brass, Steel and Wrought Iron

Shipments of brass pipe remain relatively heavy following the increased buying which was occasioned by the change in price announced some time ago. Wholesalers' stocks are accordingly reported to be somewhat heavier than they were earlier in the year, while inventories at plants remain at moderate levels. Requirements for steel and wrought iron pipe have shown but little change during the past two weeks, according to representative interests. Prices remain unchanged from the time of our last report and shipments on most items are made promptly.

Fittings

No marked change in the volume of the fittings market is reported by either manufacturers or wholesalers, turnover remaining at seasonally reduced levels. There is some demand for replacement work, and in outlying sections of New Jersey and Long Island there are some relatively heavier requirements for new developments now under construction. No changes in price have been reported during the past fortnight with the exception of steel pipe nipples, on which a revision upward was announced and a decline in drainage fittings. With the exception of unusual items, no delays are experienced in the receipt of any type of fittings from manufacturers.

Enameled Ware

Manufacturers report that shipments are somewhat heavier at present than they were before the revision in price which was announced in our last report, as wholesalers have shown a tendency to build up their inventories based on the new quotations. It is reported that contractors are likewise taking material somewhat

more freely at the present time than in the past. The demand for specials remains relatively favorable when compared with requirements for staple items, according to most wholesalers, and it is felt that this reflects the growing importance of replacement work in comparison with the total. Inventories of wholesalers remain at fair working levels, and plants are, in most instances, able to effect prompt shipments. The current price schedule is being firmly maintained at all points of distribution.

Pottery

The purchases of pottery have been mainly for fill-ins and immediate requirements, according to most wholesalers and manufacturers interviewed. Inventories are not of sizable proportions either in wholesalers' warehouses or at potteries, as production has been closely geared to demand. Shipments in most instances are prompt, although some delays have been reported in the receipt of high grade specials needed for replacement work. No price changes have been reported.

Plumbers' Brass Goods

The usual seasonal lull in this market is reported by most manufacturers of cast and tubular brass goods, although some requirements for fill-ins have been placed by wholesalers. Such buying, however, has in the main been for immediate requirements. Purchases of cast brass are reported to be relatively heavier than that in the tubular division.

There have been no changes in quotations by manufacturers or wholesalers during the past fortnight. Inventories, according to most reports, are at low levels both at distributing points and at plants, and it is felt in some quarters that any appreciable gain in contractor demand during the next thirty or sixty days would consequently occasion a rapid increase in buying by wholesalers and in plant production.

Range Boilers

Manufacturers and wholesalers report that the demand for range boilers is largely for replacement requirements. The volume on allied items, such as storage tanks, continues to be well sustained in the experience of several wholesalers interviewed, and in some instances it is reported that the turnover exceeds that of a year ago at this time. Prices are being firmly maintained by all interests and inventories are at fair working size, both at plants and with wholesalers.

Boilers and Radiators

Wholesalers report that they are continuing to build up their inventories to fair working proportions, although contractor demand is relatively light. Inventories at plants remain unchanged, as production has been closely aligned with wholesalers' requirements. Prices remain unchanged from the time of our last report.

MIDDLE ATLANTIC

Volume Is Unchanged

THE plumbing and heating sales volumes continue to lag behind last year's totals, and little change for the better, as compared with recent months, was in evidence during the fortnight, according to practically all those interviewed. June totals are estimated to be about on a par with May, but the seasonal improvement which should have been apparent was missing, and buyers have been reluctant about making commitments until a definite demand on the part of contractors comes to their attention.

Most producers have curtailed production schedules, as their inventories in practically every instance are sufficient to meet any quickening in the demand for goods. Despite present conditions an optimistic tone prevails among most wholesalers, as the last two weeks brought an increased number of price inquiries into their offices. One large dealer in this section reports the past month's business as good, in comparison with previous periods this year. Recent price changes in enameled ware and boilers and radiators tended to stimulate some business in these items, but it is also thought that this action has made purchasers cautious, fearing further reductions in other items.

Building contracts awarded in this territory made a decided upward movement during the 24th week, according to F. W. Dodge Corporation. A total valuation in contracts of $38,859,600 was reported as compared with $15,187,800 for the 23rd week. Of the 24th week's total $33,777,300 was awarded for non-residential construction, and only $3,179,600 for residential building, and a total of $1,902,700 for public works and utilities.

Soil Pipe

Soil pipe inventories are at comparatively low levels at distributors, but producers are amply stocked and thus little trouble is experienced in securing pipe on the part of the contractor. Tonnages for the fortnight were maintained on about an equal basis with the previous fourteen days, but these totals are in arrears in comparison to last year. Jobbers feel that a greater demand is in the offing and that future weeks will show larger tonnages shipped. Deliveries are on time and prices have not undergone a change.

Pipe—Brass, Steel and Wrought Iron

Steel pipe producers' salesmen report a slight decline for June as compared with May. However, May was a good month in point of volume when considering 1930 business. The demand is characterized by wholesalers as only fair. Wrought iron pipe shows little in the way of improvement for the period, contractor demand being below previous levels. Representatives reporting say, however, that quotations on this type of pipe are increasing, as many of the commercial projects started in this section require wrought iron pipe. Brass pipe still lags behind its previous consumption levels, the lack of residential work probably being largely responsible. Prices remain unchanged, and shipments from plants are made quickly.

Fittings

A few large operations have afforded the opportunity of keeping malleable fitting volumes equal to last month, in the opinion of producers' salesmen. Jobbers, when not buying for specific operations, are purchasing to bolster weak stocks, but this volume is light in comparison to previous seasons. Brass fittings are only in moderate demand at this time. Prices are unaltered on both types and makers' forwardings are prompt almost without exception.

Enameled Ware

After the recent price declines in enameled ware quotations, jobbers made purchases to replenish their stocks in sufficient quantities to cause June volumes to go ahead of May figures. Master plumbers' requirements have not quickened in proportion, however, therefore dealers' sales of these fixtures are only fair for the season. No delays are experienced in securing shipments of materials from manufacturers, and prices remain firm.

Pottery

Potters reporting say that renovation work and large commercial projects comprise the bulk of their business at this time. Consequently, staples are in lesser demand than the more special pieces. It is felt that a slight gain was manifested in business during the fortnight and earlier weeks of June. Price sheets remain the same, and potters are able to sup-

ply dealers' requirements in prompt order.

Plumbers' Brass Goods

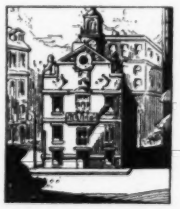
Cast and tubular brass goods production has been curtailed to meet the lessened demand of the trade, according to representatives of makers in this section. Jobbers' inventories are only of moderate proportions, and purchasing is effected only as contractor demand warrants such action on the part of wholesalers. Prices are firmly maintained by producers and jobbers. The demand for these goods is principally for replacement or renovation work at present, and manufacturers are able to deliver in good time.

Range Boilers

June range boiler business is reported as being a little less than May produced. The opinion of many is that the recent enameled ware drop caused buyers to be rather cautious, thinking of the possibility of a decline in range boiler prices. It is thought that after the July inventory range boilers wi' be in greater demand, as whatever residential building is being completed this season will then be in full swing. Prices are firm, and shipments are promptly effected.

Boilers and Radiators

While requirements for repair and replacement work are steady, the volume in heating work is only fair for e year. Renovation work occupies contractors in the major part of their activities, and demand is light. Jobbers are only buying as contractor requirements warrant, their inventories being light in most instances. Prices since the recent decline are firm, and plant shipments are quick.



NEW ENGLAND

Volume Increase Is Slight

ACCORDING to the majority of wholesalers and producers of plumbing and heating materials, the past fortnight did not contain any radical increase in volumes. Consumption needs continue to reflect a mid-season quiescence which is not particularly natural for the months of June and July. There is continual speculation as to when the prospective work on architects' boards and some of the fairly good sized operations now extant will mature to the point where shipments of plumbing and heating commodities will be substantially benefited. For the present, residential construction is not of sufficiently broad scope as to actively engage all of the good supply of journeyman labor which is presently available in this territory.

All prevailing conditions surrounding the industry are propitious for increased activity. Both wholesalers and manufacturers have ample material to make shipments when needed. It is expected that recent price reductions by manufacturers of some of the major items in the industry will serve as a stimulus to actual promotion of some of the building which is at present in a dormant state.

Buying on the part of jobbers does not seem to increase heavily, but stocks are being kept, generally, well assorted. Makers reduced their prices of brass pipe during the week. Prices of staple bowls and tanks were also reduced by at least one leading potter. Producers of drainage fittings effected declines in their quotations to jobbers. Shipments from sources are ordinarily attended with alacrity.

Soil Pipe

While there is a little better interest displayed by plumbing contractors, jobbers' dispositions fall short of their expectations. June showed some betterment in foundry tonnages for this territory, but wholesalers are still adhering to their policy of buying closely in accord with their customers' near-at-hand requirements. Sources are not producing heavily, but have good stocks on hand to apply against quick shipment requests. Foundry prices remain firm and unchanged.

Pipe—Brass, Steel and Wrought Iron

The nature of demand for these commodities did not show radical gain nor depreciation during the interval just lapsed. Distributors' commitments for steel and wrought iron pipe are not particularly extensive, orders placed in mill representatives' hands being mainly for fill-in purposes. Mill quotations on these two classes have not been changed. Brass pipe manufacturers effected a decline in their prices during the past two weeks' interval. Deliveries from sources are being promptly executed.

Fittings

Consumption of fittings maintains a fairly steady pace, but aggregate volumes of manufacturers do not assume the weekly proportions which this season of the year has granted in the past. Wholesalers aver that no one class seems to predominate in contractors' orders and are consequently committing themselves only for filling in of depleted sizes. Makers show ability to forward on dates requested. The majority of producers of drainage fittings announced declines in their prices to wholesalers. No other price revisions were effected.

Enameled Ware

Master plumbers' calls for enameled ware are not much more frequent nor voluminous than they have been during past months. It is generally agreed that recently announced lower prices on many items stimulated business in a fair way and resulted in jobbers taking into their stocks somewhat better quantities than they had previously been in the habit of ordering. Enameled ware installations still lack momentum. Production is sufficiently well upkept to insure prompt deliveries on jobbers' orders. Makers' prices have not been changed.

Pottery

At this writing there has been received from one large producer announcement of downward revisions in his prices of staple bowls and tanks. The number of pieces of special ware being called for by master plumbers for previously incepted large operations does not meet with anticipations of potters nor distributors. Residential work affords only moderate disposals of staples by wholesalers. The latter have good working inventories, but are not stocked beyond existing consumption needs. Forwardings of regular stock ware by producers are uninterrupted.

Plumbers' Brass Goods

The character of demand for cast and tubular brass goods showed no particular development since previous weeks, it is reported. Wholesalers' dispositions reflect remodeling rather than absorptions by new buildings, and their bi-weekly sales are, on the whole, not commensurate with their records for June of preceding years. The average order is more for replacement purposes rather than for stock bolstering. No price changes have been reported by producers. Shipments from factories are completed in satisfactory manner in most all cases.

Range Boilers

Relatively few carload orders are being entered with range boiler producers, wholesalers being satisfied to work along with their present inventories and to order only when certain sizes fall below the margin of safety. Such replacement business, however, combines to give makers fairly satisfactory volumes. Existing price sheets of manufacturers are being firmly adhered to, no revisions having been effected. Stocks in makers' and jobbers' warehouses are sufficient for existing

needs and delivery delays are rarely encountered.

Boilers and Radiators

Due to price revisions recently effected by makers, most all producers experienced fairly healthy sales volumes during last month. There seems to be a tendency for boilers and radiators to move towards renovation rather than new buildings, and even though the average heating contractor's order is small, the number tends to make towards satisfactory totals. Distributors and manufacturers alike are sufficiently equipped to make deliveries when called for. Makers' prices continue firm and unchanged in this territory.

SOUTHEAST

Demand Is Fair

PLUMBING and heating business for the Atlanta area continued at a fair rate, and although a slight increase in volume in some lines was reported, yet sales, on the whole, continued to be only moderately fair. Jobbers are reluctant to come into the market very strongly for large factory commitments and are adhering to the policy of maintaining small but good working stocks. Contractors are doing considerable repair and reinstallation work, but, generally speaking, they are only fairly well engaged at present. No price changes of any consequence have been reported, save a slight reduction in drainage fittings. Good stocks are being kept by jobbers and the makers are shipping with regularity.

Soil Pipe

Jobbers interviewed stated that soil pipe sales showed little variation over the previous two-week period. There was some stock buying, it was said, but this failed to reach any sizable proportion. Jobbers are still keeping their stocks pared to the minimum, but are maintaining sufficient material to meet current demands of the trade. No price change was announced and deliveries are prompt.

Pipe—Brass, Steel and Wrought Iron

Wholesalers have anticipated their needs in pipe and hence factory commitments were light for the past fortnight. Steel and wrought iron pipe continued to move at a fair rate, but brass pipe requirements were light. Jobbers have well assorted stocks on hand and are able to handle orders promptly. Contractors are doing considerable repair and reinstallation work, but report little new work. The market remained firm and prices are unchanged. Manufacturers are shipping promptly.

Fittings

Little improvement was shown in the fittings market for the latter part of June, and contractor demand continued at a fair rate, it was said. Most orders placed by jobbers were to replace stock withdrawals and orders were for small quantities. There was reported a slight revision in prices of drainage fittings, but cast iron and malleable fittings remained firm at the published sheets. A good assortment of stock is being carried by wholesalers and no delays were reported in shipping.

Enameled Ware

Quotations on enameled ware showed no change and the market remained firm, it was said. A slight increase in volume of sales was reported, but on the whole business does not compare favorably with the same period of last year. Contractors are doing considerable repair work but have little new business. Jobbers are keeping a good assortment of staple

The Stock Market

Range for Week Ending July 5, 1930†

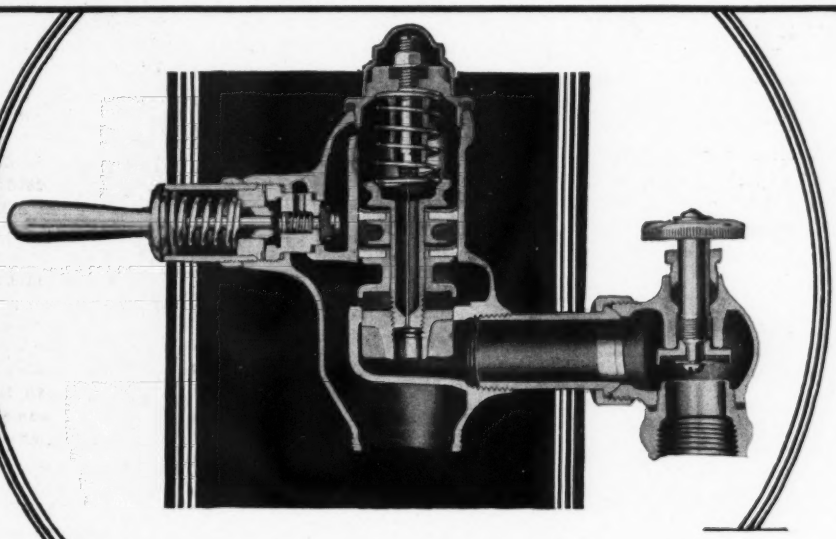
Par Value	1930 High	1930 Low		*	Weekly High	Weekly Low	Weekly Close
NP	156⅜	114	Air Reduction Sales Co	A	127⅝	115⅜	116⅛
NP	39¾	23⅜	American Rad. & Stand. San. Corp	A	25⅜	24⅜	25¾
25	100⅜	48	American Rolling Mills Co	A	55½	48	49½
50	81½	44½	Anaconda Copper Mining Co	A	51½	49	50
NP	46½	30	Bastian-Blessing Co	C	32½	31½	32⅜
NP	110¼	73¾	Bethlehem Steel Co., com	A	83⅜	78⅞	79⅝
100	134	122¼	Bethlehem Steel Co., pfd	A	126½	124⅛	124⅛
NP	30⅝	13⅛	Brunswick-Balke-Collender Co	A	19¼	14⅝	19⅛
NP	112⅜	60⅛	A. M. Byers Co., com	A & E	76⅝	70½	71⅞
100	114	109	A. M. Byers Co., pfd	A & E	112	110½	110½
100	127⅛	118	Century Electric Co., com	F	118	118	118
50	4¾	1	Chicago Nipple Mfg. Co., "A"	B	2¼	1	1
50	1½	1	Chicago Nipple Mfg. Co., "B"	B	1	1	1
25	45	42	Crane Co., com	C	43	42⅛	43
100	119½	113	Crane Co., pfd	C	115	115	115
20	21	9½	Eagle-Picher Lead Co	H	10	9½	9¾
NP	39¾	7	Fairbanks Co., pfd	A	10	8	8
NP	50½	34¼	Fairbanks, Morse & Co., com	A	39¼	37½	38⅞
100	111½	102	Fairbanks, Morse & Co., pfd	A	108	108	108
NP	20	10½	Greenfield Tap & Die Corp	B	13	10½	12
NP	29	21½	Iron Fireman Mfg. Co	C	25½	25	25½
NP	148⅜	73¼	Johns-Manville Corp., com	A	81⅜	75¼	77¼
100	123	118¼	Johns-Manville Corp., pfd	A	122	120¼	120¼
100	123½	118½	Jones & Laughlin, pfd	A & E	121	120	121
NP	76¾	50	Minneapolis-Honeywell Reg. Co., com	A	52	50	52
NP	73	47	Modine Mfg. Co	B & C	54	47	53¼
NP	34	21	Motor Wheels Corp	A	22⅜	22	22⅜
NP	49½	35⅜	F. E. Myers & Bro. Co., com	A	38½	37	38
100	105	101½	F. E. Myers & Bro. Co., pfd	G	104¾	104¾	104¾
100	189½	125	National Lead Co., com	A	133½	133½	133½
100	143	138⅛	National Lead Co., pfd. "A"	A	140	140	140
100	119½	116	National Lead Co., pfd. "B"	A	119½	118	118
NP	4½	1¾	National Radiator Corp., com	A	2⅜	2	2¼
NP	1½	3	National Radiator Corp., pfd	A	4½	4½	4½
5	31⅜	21½	Herman Nelson Corp	B	23½	21½	21½
NP	76	65½	Ohio Brass Co., "B"	B & G	65½	65½	65½
NP	30	22	Revere Copper & Brass, Inc., com	A	22	22	22
NP	72	60¼	Revere Copper & Brass, Inc., pfd. "A"	A	65¼	60¼	60½
NP	3	1½	Richmond Radiator Co., com	B	1½	1½	1½
NP	12	6	Richmond Radiator Co., pfd	B	5	5	5
NP	44	27	Ruud Mfg. Co	C	31	27	27
NP	37¾	19⅞	Spang, Chalfant & Co., com	A	32½	31¼	31⅝
100	96	92	Spang, Chalfant & Co., pfd	A	94	94	94
NP	32½	21¼	Time-O-Stat Controls Co., "A"	C	23½	22½	23½
NP	106⅞	60⅛	Union Carbide & Carbon Corp	A	71	67	68¾
20	38¼	18½	U. S. Cast Iron P. & F. Co., com	A	28⅞	27	28¼
NP	21	15⅝	U. S. Cast Iron P. & F. Co., 1st pfd	A	18⅞	18⅞	18⅞
NP	21¼	18½	U. S. Cast Iron P. & F. Co., 2nd pfd	A	21⅛	21⅛	21⅛
NP	55	42½	U. S. Radiator Corp., com	B & D	42	42	42
100	100	100	U. S. Radiator Corp., pfd	D	100	100	100
NP	35	20	U. S. Rubber Co., com	A	22⅞	21¼	21½
100	63⅞	41¼	U. S. Rubber Co., pfd	A	43½	42⅜	42¾
100	198¾	151⅝	U. S. Steel Corp., com	A	161⅜	156	157⅞
100	146	141	U. S. Steel Corp., pfd	A	145⅝	145½	145⅝
NP	9	2¾	Universal Pipe & Radiator Co	A	4⅛	3⅞	4
NP	43⅜	21½	Walworth Co	A	24	23	23⅜
NP	14	9	Wayne Co., com	B & C	13½	12½	13½
NP	35	28	Wayne Co., pfd	B & C	33	32	32
100	110	93	Wheeling Steel Corp., com	B	110	108	110
100	135½	131½	Wheeling Steel Corp., pfd. "A"	B	133	133	133
NP	29¾	16	Williams Oil-O-Matic Htg. Corp	C	16	16	16
NP	150¼	108	Youngstown Sheet & Tube Co	A	115	115	115

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during the current week, range represents last week recorded.

To the Plumber who is "SATISFIED"



If the world were satisfied, no one would have discovered the steam engine, the automobile, the airplane or the radio. Nor would any one have utilized the unquestioned advantages which these discoveries offered.

SCOVILL Flush Valves were not discovered by accident, nor have they been developed by inexperienced individuals. They have been designed and perfected by a great organization with almost unlimited resources and facilities for research and manufacture.

Over a period of years they have been developed, tested and proved to be mechanically and materially the perfect flush valves. They have been specified by prominent architects and installed in prominent buildings by prominent plumbing contractors.

To the plumber who has been using other makes of valves, and is "satisfied" with them, Scovill Valves will be a revelation in design, quality and performance. The only chance he takes in installing them is the chance of pleasantly surprising with something different and something finer, customers who, like himself, have long been "just satisfied."

Send for interesting details and diagrams

—o—

PLUMBERS' BRASS GOODS DIVISION, SCOVILL MFG. CO.
Waterville, Conn.

Features Which Make the SCOVILL FLUSH VALVE Different and Better

Of plunger type construction, the Scovill Valve has a by-pass down the center. A phosphor bronze rod suspended from the valve cap extends through the by-pass and cleanses it each time the valve is operated.

Long bearing surfaces on the sides of the plunger itself cause it to ease gently up and down the cylinder walls; working AGAINST the water pressure, smooth shut-off is assured and water hammer, another reason for servicing, is practically eliminated. The water inlet is definitely sealed as the plunger eases itself down to a firm, even seat.

The flush of the valve can be regulated from the OUTSIDE, a great assistance in equipping odd size bowls and urinals.

SCOVILL

Flush Valves ~ Shower and Bath Fixtures ~
Tubular and Miscellaneous Plumbers' Brass Goods
A COMPLETE LINE

The Metal Market

	July 8	Average May, 1930	Average March, 1930	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$18.00	$19.00	$19.50	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.70c	1.75c	1.85c	1.93c
Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.15c	2.15c	2.25c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.55c	2.55c	2.65c	2.85c
Galvanized sheets, No. 24, Pittsburgh, per lb.	3.15c	3.25c	3.30c	3.57c
TIN—				
Straits tin	30¼c			
LEAD—				
Chicago	5.50c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	13½c	Copper, light	7½c
Block, tin	26 c	Copper, uncrucibled wire	11 c
Brass, light	4 c	Faucets and valves	7½c
Brass, heavy mixed	7 c	Lead, heavy	4¼c
Brass, red	7½c	Solder Joints	7½c
Copper, crucible	9½c		

NOTE: Prices are those quoted on Tuesday of this week.

ware on hand to care for the immediate requirements of the trade. Factory shipments are being made promptly.

Pottery

The consumption of pottery remained moderate for the latter part of June, with little contractor demand shown. Jobbers are maintaining good working stocks. There have been no changes in prices, and factory deliveries on staple pottery are made on schedule. Contractors are fairly busy with reinstallation work.

Plumbers' Brass Goods

Master plumbers' needs for brass goods were reported as moderate for the past fortnight. Factory commitments specified small quantities and were primarily for stock replacements. Jobbers are not loading up on cast and tubular goods, but are maintaining good working stocks on hand. No changes in prices have been reported and shipments from sources have been prompt.

Range Boilers

Although a slight increase in demand was reported in some sections of the Atlanta territory in range boilers, the total volume continues to lag and is reported to be below the level established a year ago at this time. Replacement business continued to represent the bulk of range boiler sales. The price situation remained firm at the published sheets, and factory consignments are handled promptly.

Boilers and Radiators

Only a fair amount of business was had for the latter part of June, it was reported, and the volume continued light. Jobbers are buying only as contractor demands dictate and show little indication to increase their factory commitments. Local wholesalers are amply situated to care for the immediate requirements of the trade. No price revisions were announced, and makers are shipping in a satisfactory manner.

PACIFIC COAST

Volumes Decline

VOLUME in most commodities, along the Pacific Coast area, is reported to have been slightly reduced during the past few weeks. The demand for materials varied in the different jobbing centers. While plumbing contractors have experienced some decline in their activities through a slowing up of new building, a comparatively large amount of renovating and repair work has tended to keep the plumbing business at a brisk level, it is said. Plumbers' brass goods continue to outsell all other commodities, while the demand for enameled ware, pottery and other roughing materials is keeping at the same level as in weeks gone by. There is an abundant supply of all materials to be had and little delay is experienced in obtaining early delivery from all manufacturing sources. Distributors' prices by all concerned remain unchanged.

Soil Pipe

The demand for soil pipe is seasonally light at this time of year, with the volume up to expectations. Stocks are adequate at all points of distribution, but jobbers are carrying only sufficient stocks to meet immediate requirements. Prompt delivery is the rule by all manufacturers in filling jobbers' orders. Distributors' prices to the trade vary somewhat in the different jobbing centers, but on the whole are holding firm.

Pipe—Steel and Wrought Iron

Steel pipe continues to move in a moderate demand, with the trade generally purchasing for immediate requirements only. There has been little change in the volume of factory-placed orders. As a whole, jobbers have sufficient supplies of pipe to meet current demands. Distributors' prices to the trade remain unchanged on steel pipe. Wrought iron pipe continues to move in a volume which shows little change from week to week. Distributors of this commodity are carrying good stocks.

Fittings

A fairly satisfactory volume of business in the various types of fittings was experienced during the past fortnight and business in this line is holding at a steady level. Distributors have well assorted stocks and little delay is experienced in obtaining early delivery of immediate needs. No price changes have been announced.

Enameled Ware

The past fortnight failed to bring anything new in the enameled ware market as far as volume of business was concerned, it is reported. The trade is following its usual policy of purchasing ware which is needed on contracts already secured. Few inquiries for future requirements are noted. Distributors' stocks are sufficient to care for all inquiries received.

Pottery

The demand for pottery showed little change during the past two weeks, according to sources of information. The wholesale volume may be said to be fair and jobbers are ordering from manufacturers mainly in small quantities to keep their stocks at a normal working level. Distributors' deliveries are generally prompt, with Coast potteries shipping promptly.

Plumbers' Brass Goods

This commodity continues to be in substantial demand throughout the Coast area and is outselling all other lines in the plumbing supply line, according to jobbers interviewed. Distributors are carrying stocks to take care of all orders received and can also obtain prompt delivery on all items from manufacturing sources if required.

N. A. M. P. Convention

(Continued from Page 134)

Walter J. Kohler, Jr., of Kohler Co., Kohler, Wisc., expressed the regrets and good wishes of his father, Governor Kohler of Wisconsin, adding that he took great pride in having been present at conventions of master plumbers over a period when such extensive advancement has been made.

A. M. Maddock of Standard Sanitary Mfg. Co., Pittsburgh, Pa., adding his greetings, said that Mr. Donoghue and the members of his committees have, through their accomplishments in making such thorough arrangements for the convention, earned congratulations.

C. W. Wanger, president of Woodward-Wanger Co., Philadelphia, urged that proper attention be given the educational program by the delegates and guests.

Joseph J. Crotty, vice president of Central Foundry Co., New York City, in a few remarks indicated the pleasure he has had through working with many of the master plumbers, manufacturers and architects.

Herbert A. Snow, of Boston, a director of the Heating and Piping Contractors National Association, as a representative of Walter Klie of Cleveland, president of that organization, brought an expression of good will and mentioned the fact that of the opportunities for co-operation but little was done until committees of the two organizations got together for consideration of trade promotion, which primarily embodies credits and trade practice rules. Mr. Snow also pointed out that with these problems headed toward a solution there will in all probability be an increased number of matters requiring joint consideration.

Mr. Flentje importuned the delegates and guests to attend the educational meetings and participate in the discussions, as many of the problems to be approached are of great pertinence to the master plumber.

Fred W. Swanson, president and commissioner of the National Plumbing and Heating Institute, Chicago, mentioning the important changes that have taken place within the industry during the past two years, expressed the opinion that only through closely co-ordinated effort among the three principal branches can these problems be adequately met and greater advancement be assured.

Mr. Donoghue briefly detailed the work that arranging the setting for the convention entailed and asked that thorough visits be paid the booths by delegates. He

Top row: R. G. Crevistón, Chicago, sales promotion manager, L. B. Peeples, Los Angeles, vice president in charge of West; P. R. Mork, New York, manager metropolitan district, J. L. Comer, Chicago, all of Crane Co.; W. W. Morgan, William Redleske, W. E. Blair, W. C. Shanley, J. J. Hurley, H. J. Du Bois and B. T. Nolan, all of Imperial Brass Mfg. Co., Chicago, R. L. Adair and H. E. Branch, both of The Grinnell Co., Providence, R. I. Second row: J. E. Booth, Wayne Vosper and W. J. McGrath, all of Toledo Pipe Threading Machine Co., Toledo, Ohio; T. M. Lilleberg, Harry G. Nye, president, and F. E. Johnson, all of Nye Tool and Machine Works, Chicago; E. L. Penfrase, sales manager, A. F. Loucks, Jr., M. J. Koblitz, treasurer, W. J. Butler, M. J. Hirshstein, director sales promotion, George H. Lang, S. L. Marsh, A. S. Hall, Joseph Hirshstein, president, John Reid, all of Josam Mfg. Co., Cleveland, Ohio; Earl E. Brown and Mrs. Brown, Chicago Faucet Co., Chicago. Third row: H. H. Carson and Alfred Rogers, both of Dececo Co., Boston; A. P. Weiss, A. E. Bastedo, general manager, H. E. Riley, all of Burnham Boiler Corp., Irvington, N. Y.; C. E. Schulz, Dayton, Ohio; E. I. Boardman, Richardson & Boynton Co., New York; C. W. Farrar, Excelso Products Corp., Buffalo, N. Y.; H. T. Richardson, president, Boiler & Radiator Institute, New York; J. McClure Chase, New York, vice president, W. A. Case & Son Mfg. Co. Bottom row: H. E. Coe, manager Connecticut branch, T. R. Burke, manager technical department, and W. D. Murphy, advertising manager, all of Sloan Valve Co., Chicago; Fred T. Scott, Walter Stevens, sales manager, W. C. Mattox, advertising manager, H. W. Forbes, R. E. Wilkinson, John C. Coonley, R. C. Mattox and H. B. Bradford, all of Walworth Co., Boston

Group picture taken at Boston convention

thanked the many manufacturers, wholesalers, organizations, and the committee members for the assistance which they contributed.

Russell G. Creviston of Crane Co., Chicago, and a member of the special educational committee, outlined the program prepared by that group.

As a matter of very practical interest to the convention, President Drake called on Jere L. Murphy of New York City to inform the delegates concerning the lien law which has just recently been passed in New York state.

New York's Lien Law

Speaking on the lien law, Mr. Murphy said: "The first mechanics' lien law in the United States was passed in the city of Washington, D. C., some eighty-five years ago, and the cause for that law was that there was considerable construction work going on in the city of Washington at that time. Contractors and laborers had not been paid for the work which they had done on buildings. Therefore, those in charge of the construction work for the government decided that it would be well to give the mechanic, or the man who furnished material for those buildings, some right to collect his money. They put into effect at that time what is commonly known as a mechanics' lien law. The original lien law only included labor and did not include materials. Later on, the different states took up the subject and enacted separate lien laws.

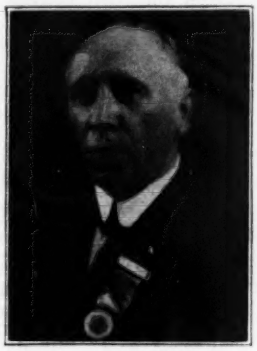
"During our activities in New York state we investigated the lien laws of about thirty-five states. In New York we had a law that afforded us very little protection, if any. The last amendment was made some forty-five years ago, with the result that the law was behind the times.

"About 95 per cent of the construction work in the United States is carried on with borrowed money. There are institutions which loan money on building construction, and you men who have had experience in procuring a building loan know that you have to buy the plot of ground. Then you go to an architect to have the plans and specifications drawn. You then go to a loaning company and negotiate for the loan. That was the condition in New York state some three years ago.

"When someone negotiated for the loan, one of the questions was: 'What are you going to do with the proceeds of this loan?' The borrower answers that he was going to apply it to the construction of this building. He then went out and let contracts for the construction of that building and some day he went down to procure money as per his agreement.

"When it came time for him to get some money to pay the mechanics or material men, he went to the loan company and wanted payment. After the loaning company gave him that payment, he, the borrower of the money, did with that money what he saw fit. He could use that money for any purpose and remain within the law. For example, I got a contract some four years ago to install the piping in a building. The contract called for the payment of $10,000. In this case, I made up my mind that I was going to collect from this fellow as I went along and would not extend any credit to him. The result of this contract was that I finished the

job and found that he had taken $2,000 on a contract on which he had agreed to pay me $10,000. I met with the old time answers: 'Go out and get it if you want it.' I found out that this man had borrowed $200,000 with which to erect that building and I found on investigation that he had turned over to the contractors only $87,000 and had taken the remainder of the money and put it in his pocket. He testified in court that he had used that money for every and any purpose other than to pay the contractors who furnished the material and labor on that job."



F. C. Kuetemeyer

Mr. Murphy then pointed out that this weakness in the lien laws did not apply to any other industry. If a man procured money by false representation from financial houses or insurance companies, he was guilty of a felony. But in the building industry a man might secure a loan and use the money for any other purpose, and yet remain within the letter of the law. The matter was taken up with the governor of the state and with the legislature, with the result that today it is a felony to procure money on a loan of this kind, and then use the money for other purposes. Mr. Murphy said that New York would be glad to cooperate with any of the other states where the lien law is similar to the old law in his state and asked those interested to write him.

Architects Propose Uniformity

Following this, President Drake said: "There was a matter referred to the board of directors from the American Institute of Architects—the question of a general contract and bond form which have been approved by that organization." Mr. Murphy was called upon to explain the matter, and said: "The American Institute of Architects has approved a form of contract and bond. They have gone into the matter very thoroughly. Your committee has met with them, and we think that it would be advantageous to the contracting plumbers of this country to approve that type of contract and bond. Therefore I move that we do approve the type of contract and bond as submitted by the American Institute of Architects." This was done.

President Drake then called on William J. Lang of Chicago, in connection with certain matters having to do with assuring the contractor of the financial soundness of any project upon which he is working. Mr. Lang said:

"The question of bonding a contractor has been quite a problem with the architect and owner. It has come to my attention in Chicago, and I presume that there has been a similar condition throughout the country, that the owner and architect protect themselves that the contract will be completed by a surety bond. We in Chicago have had some experience where buildings will be erected up to the eighteenth or twentieth story and then find that the building has not been properly financed. I took this matter up with the attorney general of the American

Shoulder to shoulder in the service of safety

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Brakes screech in the night. A train grinds to a halt at an unscheduled stop. The trainman races back to light a blazing flare . . . a signal to trains that may follow.

Like the trainman's signal in the service of safety, the red top of a Red Top Relief Valve is a symbol of safety in another sense. It identifies a pressure relief valve which, installed in a domestic hot water supply system, forestalls disaster and destruction when pressures rise to the danger point.

Working on the unfailing gravity principle, Red Top Model No. 1 may be set to relieve at 50, 75, 100 or 130 pounds. It provides positive insurance against range boiler and tank heater explosions and ruptures in piping and fixtures caused by excessive pressures.

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Surety Company and asked him at what price he thought the contractor could secure a surety bond that on the completion of his contract his bill would be paid.

"They went into this matter thoroughly. I have the report which I am to submit to a committee to be selected by your incoming officers which will assure the contractor that your money will be paid on the completion of the contract.

"It will be worked in this way: You sign a contract for $50,000 or $100,000 work. You put in about a thousand dollars' worth of work and you ask for a report on the surety bond for your contract. Upon receipt of this report you find that the surety company will not underwrite your contract. If you will go to the promoter of this building, show that report of the surety company, I am convinced if it is not financed as it should be he will see that collateral is put up to secure your payment before you inform other contractors that the job is not financed and this company will not underwrite it." Mr. Lang indicated that the matter would be studied and submitted in detail at the next convention.

The Convention Spirit

EVERY convention has a quality or character definitely its own. About the convention in Boston there was an atmosphere of liveliness and activity. The convention hall was entered through the great exhibition rooms, where the general public and the delegates and visiting master plumbers rubbed shoulders before the booths in which were exhibited the products of the industry. The two afternoon sessions planned by the special educational committee were heavily attended.

Perhaps nothing better marked the underlying spirit of the convention than the activities centering around the nomination and election of officers. As James S. Cassedy of Boston said, in seconding the nomination of H. O. Green of Tulsa for the office of treasurer, "I believe your job is to vote for the organization. As we men grow older we take a little different view, perhaps. We are more inclined to decide fairly between the organization on the one hand and its interests, and our personal friendships on the other." Thus, although with every expression of friendly esteem, personal friendship and sectional feeling gave way before the desire to serve the best interests of the association.

Many fine tributes were paid to the men who were proposed for office. In placing Mr. Drake's name in nomination, John J. Vogelpohl of Cincinnati said: "It is a pleasure to place a name in nomination without making many promises. We have seen Mr. Drake in his association activities for many years, and during the last few months carrying on the work of your organization. I am sure he will continue along those lines. I am sure we are very fortunate in being able to have a man of his standing and character represent us as our national leader." When Mr. Drake had been escorted to the platform Jere Sheehan, Jr., presented him, saying: "I do not know of anyone who has had a better opportunity to gauge the qualifications of the man you have selected for your chief executive than myself. I solicit for him the hearty co-operation which has been extended his predecessors."

Richard Welch of Lowell, Mass., a past national treasurer, placed the name of P. W. Donoghue of Boston in nomination for the vice-presidency. "We are going to ask you," he said, "to elect as your vice-president for the coming year a man whom we very much honor and admire. He has been honored by the governor of this commonwealth. He is the present president of the Massachusetts state association, and, above all, a good friend, a true friend, and a gentleman. If, when you leave here for your homes you would care to do something that would win for you the affection of the people

Tow row: George H. Matthews, Chicago; George Schroeder, Ft. Thomas, Ky.; C. F. Seifried, president Cleveland, Ohio, association; E. F. Bohm, secretary-treasurer Cleveland association; J. V. Young, San Francisco, vice-president California Master Plumbers Association. Bottom row: E. G. Hutchison, Domestic Engineering; L. McNamara, past national president, St. Louis, Mo.; M. J. Kennedy, president of Greater New York Association; Herbert A. Snow, Boston, Mass.; R. V. Sawhill, Domestic Engineering

of Massachusetts you will elect as your vice-president P. W. Donoghue."

In nominating Samuel F. Wilson of Newark as treasurer, Jere L. Murphy of New York said: "New York City comes to you to request you to elect a man to act as treasurer who is very prominent in business and civic work in his city; he is a man who has done a great deal for the plumbers. This is a business organization, and when a business organization or a business house of any type wants to select a treasurer they look for a man of stability. They look for a man who has the respect of the community in which he resides. Such a man we present to you today in Samuel F. Wilson of Newark, N. J."

E. D. Hornbrook of Kansas City placed the name of H. O. Green of Tulsa in nomination for the office of treasurer. He said: "I want to place in nomination a man who has filled many offices. He has been on the board of directors for two or three years, a man whom the board of directors well know, a man who has thoroughly served his local, his state and his national association."

The customary impressive ceremonies in memory of the past presidents who have died were held under the direction of Henry E. Longley of Wilmington, N. C., with a special memorial ceremony in charge of W. J. Lang of Chicago for David H. Roberts of Cleveland, John A. Quinn of Philadelphia and Alfred C. Eynon

Top row: S. P. Hackley and George J. Belknap, both of Belknap Mfg. Co., Bridgeport, Conn.; Charles Gerstein of Gerstein & Cooper, Boston. Middle row: Frank G. Curtin, A. F. Curtin Valve Co., Medford, Mass.; G. Albin Nilson, president of Fiat Metal Mfg. Co., Chicago; Andrew J. Bowen, New England representative of Fiat Metal Mfg. Co. Bottom row: Jos. Woods, New York manager, Speakman Co.; E. S. McLean, Speakman Co., Wilmington, Del.; D. L. Mills, Rome Brass Radiator Corp., New York City

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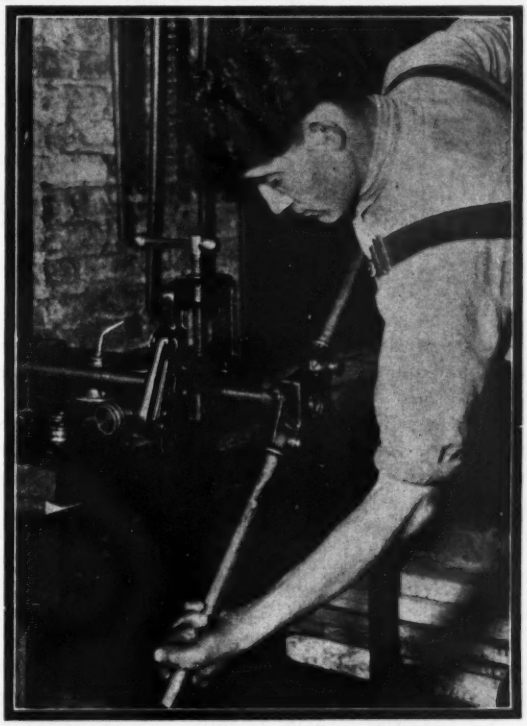

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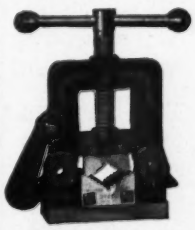
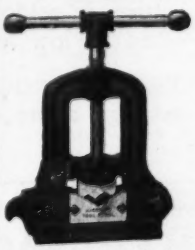
Malleable Irons come in many qualities, range as much as 100% in strength. To establish an iron of known strength the producers have created their standard in "Certified Malleable Iron," a metal of fixed quality.



Standard Vise



Heavy Duty Vise

Bodies of ARMSTRONG BROS. Standard, Heavy Duty and Open-side Pipe Vises are of Certified Malleable Iron. Jaws are of Tool Steel, carefully milled, hardened, tempered and tested. There are many refined details of design, like the oval knobs on handles that will not pinch the hand, and the double-wear threads of the screws. Hooks of the Standard Vises are of drop-forged steel, are tough, unbreakable.

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of Canton. Brief memorial addresses were delivered by John J. Vogelpohl of Cincinnati, George F. Uber of Philadelphia and E. D. Hornbrook of Kansas City.

Convention Committees

To assist in transacting the business of the convention, President Drake appointed the following committees:

Auditing—Robert H. Pflug-Felder of Philadelphia, chairman; John D. Cooley of New York City and Edward Monteath of St. Louis, Mo.

Credentials—William Wolff of Brooklyn, chairman; Melvin McKay of Rock Island, Ill.; David H. Alsop of Washington, D. C.; John R. Newsome of Philadelphia, and Edwin B. Clayton of Denver, Colo.

Resolutions—Samuel F. Wilson of Newark, N. J., chairman; Henry J. Ritter of Buffalo, N. Y.; Lewis R. Friend of Milwaukee; William S. Loftis of Atlanta, Ga., and Franklin E. Darling of Fall River, Massachusetts.

The reading clerk for the convention was J. Preston Perham of Boston.

Educational Program Elaborate

ALBERT B. DIBBLE of New Haven, Conn., chairman of the standing committee on education, in his report of the year's activities stressed the need for such educational work in every state. The work of the special educational committee formed a most important part of the program for the first two days of the convention.

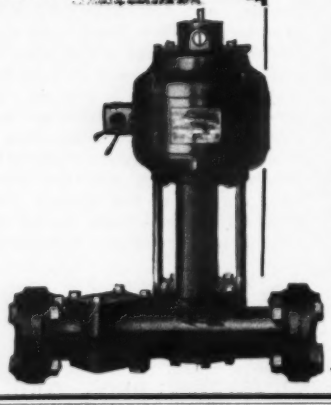
On the first day of the convention, the committee presented Harry Collins Spillman, an inspirational speaker, who addressed the convention on "The Value of Association Work in Industry." Mr. Spillman traced man's development to the point where the tribal instinct began to assert itself. "All kinds of co-operation as we know it today," said Mr. Spillman, "are refinements of the tribal instinct.

"Whether you like it or not, the wealth of the world is measured in terms of power. We live in an age of power. The information made available to you is of value to the extent that it becomes powerful. The aid or information you get out of this meeting depends on whether or not you are able to translate that information into your work and in your community. So I ask this question about your association: How powerful is it?

"One of the greatest powers I know in the world is the power of co-operation. The purpose of association is to get together and learn how to make money. You can not render service if you do not make money and it is the business of an association like this to find out how and then stand behind it in your operations."

Mr. Spillman appeared on the morning program. At the opening of the afternoon session, C. W. Wanger,

Pays For Itself in Fuel Savings Alone!



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The HYDROLATOR by means of a centrifugal pump drives the water through the system several times faster than ordinary thermal circulation.

Temperature differential between flow and return is seldom greater than 15 degrees and often as low as 5.

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chairman of the special committee, took the platform: "In order that the background of this educational work carried on by your association may be clarified," he said, "I should say a word or two. During Mr. Sheehan's administration he conceived the idea that he might educate the retail outlet by having the master plumbers at their national meeting put on a worth-while educational program. Last year was our initial attempt and met with a great deal of favorable comment, so much so that your board of directors this year decided to carry on the work.

"The men who constitute the educational committee for the national association are men who have diversified interests in our industry. They are manufacturers' representatives who have spent a life-time in the study of advertising. They are men whose business it is to manage large sales organizations. In addition to that, we have a representative group of master plumbers who have the very practical experience of the resistance they meet every day in their business.

"The effort this year for the educational program is on a little more elaborate scale than it was last year. Coming out of the work that was done last year, it seems to me that the thing literally caught fire. In some states they have been conducting very personal educational programs, teaching by demonstration, by dialog.

"The idea behind these educational programs is to give you inspiration—to let you see what can be done so that you might as leaders in your organization in various parts of the country bring to your membership the possibilities of salesmanship. The Industries Bureau at its meeting here voted a sum of money to go along with this personal selling program. We hope to have the national association and the Bureau co-operate in a joint program to put on sales demonstrations all over the United States, the idea being to move into a central location and from that central location have these educational meetings."

Mr. Wanger then introduced E. L. Flentje, manager of the Plumbing and Heating Industries Bureau. Mr. Flentje reviewed the situation as it confronts the contractor today. He urged the contractor to change the fact that 75 per cent of the plumbing which goes into consumer use is bought and not sold, by presenting the merchandise on the basis of style, longevity and social prestige. People are satisfied with bathtubs on legs, Mr. Flentje said, because they think of them in their purely utilitarian character. They have not been taught to consider their style, longevity and social prestige.

"The public attitude is changing. They are thinking more favorably of us, but we have a long way to go. The master plumber must train every single unit in his business—his telephone girl, his bookkeeper, his journeyman, train them in presenting his business so that it will gain a favorable impression."

On the program for this session were Rupert J. Weber, president of the Chicago association; Bruce Wigle of Detroit, and Charles M. Swinnerton of Los Angeles, a national director. Each presented a different view of the general subject, "How I Built My Business." The papers of Mr. Weber and Mr. Swinnerton are printed in another part of this report.

Following the reading of the papers, open discussion

"I'LL STOP THAT NOISE WITH A SHERWOOD"

"The tank in my bathroom is constantly whistling and gurgling. It is always dripping and leaking. Can you do anything about it?"

When a customer makes that sort of inquiry, the safe reply for you to make is, "I'll stop that noise and that leak with a Sherwood Ball Cock."

It's safe because Sherwood is guaranteed to close against any city water pressure without whistling, gurgling or leaking.

Every bathroom, old and new, deserves a Sherwood Ball Cock. And here's an interesting fact:

When you install a Sherwood Ball Cock in an old bathroom, it stands as a sample of the work you do. Its wonderful performance will often be the means of opening up big leads for complete bathroom remodelling.

Sherwoods are furnished with any length shank desired. They are always readily available thru your jobber.

Try a Sherwood for your next job. You'll know why it is "standard" with hundreds of plumbers everywhere, when you do.

Mark it down, now, to order a Sherwood Ball Cock.

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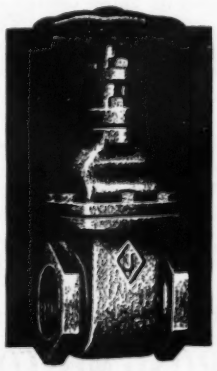

78 Years of manufacturing experience go into the making of Jarecki Valves. The metals used are analysis-proved—fitted chemically and structurally to do the job for which they are intended.

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from the floor was called for. Mr. Wigle's address, covering the operation of the completely equipped repair truck, brought many questions. This address will be published in a later issue.

At the conclusion of the reading of the three papers, Mr. Wanger said: "You have heard three progressive plumbers of the United States who have three distinctly different types of businesses. They are making money. One of them cashed in a profit of $40,000 last year. We felt sure that what they would say would be of real help to you in your business."

On the second day of the convention, as a part of the morning session, Harry Newman Tolles, another inspirational speaker, delivered an address on "Retail Selling of Plumbing and Heating Equipment." Mr. Tolles started out by announcing that he wanted to talk on the theme: Building business on bumps. In golf, he said, a great deal of money is spent to create hazards, in order to make the game more difficult and, therefore, more interesting. The successful man in business, he said, is the one who can turn the hazards and disadvantages into real advantages.

"In business," said Mr. Tolles, "you have five things with which to work: materials, machinery, merchandise, money and men. Man is the cause and the other four are merely effects. If you take care of the men, the others will take care of themselves.

"Modes of conduct are mighty important in business today. The attitude of the salesman and of the business man needs study. When you go back home, you call up your own establishment and see what kind of a voice you get over your telephone.

"In selling there are three things," Mr. Tolles said at another point, "the salesman, the customer and the goods or service. The sale is made when the salesman's mind meets the customer's over the proposition.

"The main departments in selling are, first, the salesman, and there are some sixty-two qualities that every normal human being has; then comes logical presentation; then comes the customer. You will be helped by studying human nature. Everything about a man tells you not what the man thinks but how. If your customer talks quickly, and moves quickly, and speaks quickly, you can put it down that he thinks quickly. If he moves slowly and talks slowly, he is a slow thinker. You can not slow down your talk with the quick thinker or speed it up with the slow thinker. I promise you men that if for two weeks, in business and out of business, you will think of this thing, ask yourself whether you are speaking to a fast thinker or a slow thinker, it will be worth the cost of coming to this convention."

On the second day of the convention, during the afternoon, the play, "Father and Son," written by a student of the Yale Dramatic School, was played to a full hall. The play depicted the difference between the old method and the new method of conducting a plumbing business. The first scene was laid in an old-time plumbing shop, with a jumble of material all over the place. Father and son are having a continuation of the constant argument about the methods by which the father was conducting the business. The argument terminates when the father orders his son to get out and start a business of his own, if he thinks he is capable of doing better.

During this first act a set of plans and specifications are brought in by an architect. The father puts in his bid of $7,500 on the ground that he had done a similar job the year before. The son protests. It is then that the break between them comes.

There follows a scene in the architect's office. The father is low bidder of three contractors, the son high. By explaining to the owner some of the things which he has figured on, the son secures the job. The scene shifts back to the father's plumbing shop. The son intends to handle the business through his father, of course; and convinces his father that he ought to go away for a vacation.

The last scene shows the plumbing establishment six months later, when modern ideas have been applied to it. The business is prospering and the father returns to find himself in a very different atmosphere, which he can not deny is better than the old; and which has certainly put profits on the books of the company.

There was no doubt about the effectiveness of the play. The audience gave every sign of recognizing familiar touches in the scenes and in the action of the play. With very little in the way of scenery, the play

Top row: H. J. Phillips, Mrs. H. J. Phillips, John A. Khym, Mrs. John A. Khym and Joseph Khym, all of Chicago. Middle row: Mr. and Mrs. L. J. Hatch, Bridgeport, Conn.; Abe Mitofsky, president of Providence, R. I., association. Bottom row: Ed. Monteath, president St. Louis, Mo., association; V. L. Sheldon, St. Louis; A. O. Bornemann, secretary West Hudson association, Kearny, N. J.

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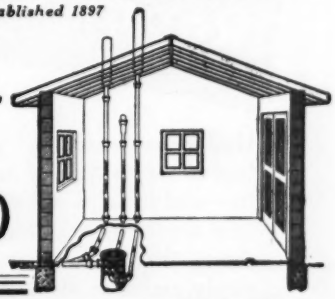

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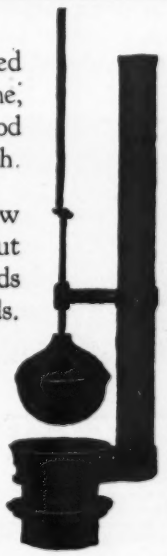
TANK VALVES

If you aren't acquainted with the Trenton line, this tank valve is a good item to get started with.

It'll show you just how much we know about making plumbing goods that *are* plumbing goods.



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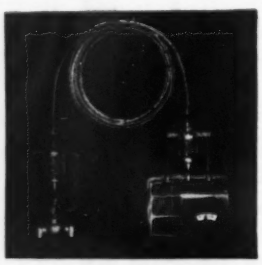
Under or overheating—means loss of health, loss of wages, loss of material, loss of profits—and it helps nobody. Stop this senseless waste by installing a Sylphon Regitherm that will automatically, and accurately maintain the temperature you desire 24 hours every day, year in and year out, with very little attention.

The Sylphon Regitherm is made in many types and sizes to fit your particular requirements. Thousands of installations in the past 16 years attest to the accurate performance and serviceability of this type of temperature controller.

If you wish to know more about the Sylphon Regitherm and what it can do for you, write for Bulletin ND- No. 175. No obligation.



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REGITHERM

The Regitherm provides the easiest and most practical means for controlling temperature of dry rooms of all descriptions which should be maintained at certain temperatures; cotton warehouses; and for the control of air currents in fan and duct systems. Also for control of cold storage rooms where calcium chloride brine is used for the cooling medium.

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was convincingly staged and the players deserved and won generous appreciation from the audience.

In closing the educational program, C. B. Nash of Standard Sanitary Mfg. Co., and a member of the special committee, took the platform. "My appearance here this morning," he said, "represents the final part your special committee is taking in this convention. On Tuesday, and again yesterday, addresses of an inspirational character were delivered by speakers of international note, and it is sincerely hoped by your committee that the addresses accomplished what they were planned to accomplish.

Will Continue Educational Work

"The real feature and the real climax of the work of this committee was shown yesterday afternoon in the play which was given on this stage to probably the largest audience ever assembled at a convention of this kind. The presence of this large audience, and the manner in which it received the play, was most encouraging to your committee. So much so that the committee have promised to increase its efforts in behalf of the educational work.

"I have been asked on behalf of this committee to express its appreciation for the co-operation shown by your national president and other executives of your organization, and by the committees in charge of the Boston arrangements. Your committee will keep on in its plans for educational work of this character and you will receive word from the national office and from the Bureau during the year."

Jere L. Murphy paid tribute to the Boston association for the wonderful reception it had accorded the visitors, and called for a rising vote of thanks for the auxiliary, Massachusetts association and for the associations of Boston and the communities in the vicinity.

Following this, Mr. Murphy said that he desired to honor one "who has been with us in fair weather and in foul, a woman who has done more for us and for the industry than any other single person in it. I wish to make the motion, Mr. Chairman, that we send a telegram to Mrs. E. D. Hornbrook to say that we regret that she is not able to be with us." Mr. Murphy's motion was carried by a rising vote.

The Entertainment Program

On Monday evening, June 23, there was a reception by the officers of the national association followed by dancing. The second day of the convention brought the parade from the Statler Hotel to Mechanics Building, which housed both the exhibit and the meeting halls. In the evening the ladies were entertained with a vaudeville program in the headquarters hotel while the men attended boxing matches. At eleven o'clock there was dancing once more in the Statler Hotel.

On Wednesday evening convention visitors went to Revere Beach, where they enjoyed the various amusements offered. On Thursday evening was held the President's Ball in the Hotel Statler ballroom.

A motor bus trip over the route followed by Paul Revere in his historic ride to Lexington and Concord was provided for the day following the final adjournment of the convention.

C. M. Swinnerton Cites Value of Store Displays*

THE transformation that has taken place during the last ten years in the places of business of the men engaged in the plumbing and heating industry is quite remarkable and outstanding.

Ten years ago few plumbing establishments were located on business streets and fewer on the principal business thoroughfares. In alleys, basements and side streets were located the plumbing shops and establishments, generally indicated by a 30-gallon range boiler hanging to the outside wall with the word "Plumbing" painted on the sides facing up and down the street. But an awakening has taken place, and today we find many, many merchant plumbers maintaining places of business located on front streets and on principal thoroughfares heralding their business and occupation and arresting the attention of the purchasing public by attractively displaying their merchandise through well lighted plate glass windows.

The increase in the number of such establishments has been most pronounced during the past five years. Day by day the number increases. All this points very clearly to the conclusion that the store most certainly has proven an asset and a profitable one.

The Value of the Store

What special values are created in the maintenance of a retail store? First: If the desire to merchandise prevails, this in itself is valueless unless the means for successful merchandising are used. The rental of a modern store on a well-traveled business street, one where a reasonable chance of success exists, will entail some expense. This can be taken care of by adding other lines of merchandise which will fit in with a plumbing business. The sale of plumbing accessories, brass goods, garden hose, gas stoves, refrigeration, gas heaters, electrical appliances, Mazda lights, automatic water heaters, etc.

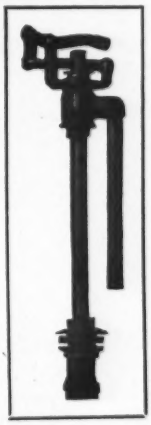
By handling other lines of merchandise you unconsciously become a better merchant. The percentage of profit realized on these articles will open your eyes to what should be and can be received on the plumbing accessories and plumbing business which you handle. You become fully convinced that the low margin or mark-up on plumbing goods is the contributing cause and reason for the absence of plumbing stores on the business streets in our cities in the past. You will find when you get into these other lines that the mark-up is fifty, and sometimes one hundred per cent. And it will not be long before you are getting the same profit on your plumbing goods as on these others.

A store on a business street indelibly marks you as a business man. You mingle with your neighboring tradesmen and create and gain many very valuable contacts. You have a great opportunity to sell yourself and your establishment to a great number of prospects. Your establishment on a business

*An address given at Boston convention of National Association of Master Plumbers.

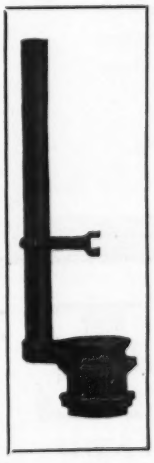
Easy and Stubborn

ENTERPRISE Ball Cocks



Ask any contractor who installs Enterprise Ball Cocks to give you a quick description of them.

He'll say they're easy to install but stubborn when it comes to wearing. And if you ask him for a more detailed description of them, he'll tell you that they operate quietly without making the tank sound like a fife and drum corps rehearsal.



Enterprise Ball Cocks are finding new friends every day among contractors and they're finding new customers for their friends, too.

They're made as all Enterprise Brass Goods are made—from the highest quality brass, by the most skilled workmen. They're sold by jobbers everywhere.

ENTERPRISE BRASS WORKS
MUSKEGON MICHIGAN

Fretz-Moon

Clean Threads and Sharp—

SINCE Fretz-Moon are specialists in the manufacture of pipe—it is a regular every day routine to inspect and gauge the threads on the pipe and in the couplings. Just another reason why plumbing contractors like Fretz-Moon Pipe—all the threads are clean, sharp and uniform.

FRETZ-MOON TUBE CO., INC.
BUTLER, PA.

PIPE

BLACK and GALVANIZED

street presents a constant invitation to the passerby (every one of whom is a potential customer) to enter and do business with you. Your standing is taken for granted. It goes without argument that such a store, well stocked, with windows well dressed and arranged in a business-like manner certainly inspires confidence in those who enter.

It further conveys to the mind of a prospective purchaser that the firm is reliable, has an investment in stock, etc.—is so different from the usual plumbing shop that it must be reliable; things look substantial and established—an invitation.

Confidence is more easily created and retained. The opportunity to sell is accentuated by the surroundings. People come in to purchase a length of garden hose, and see displayed beautiful water closet seats, swing-spout faucets, electric appliances, automatic water heaters and other articles the merchant has to sell. The desire to purchase is created and most valuable contacts made and stability of business increases.

You have a large number of prospective customers entering your place of business, giving you full opportunity to increase your contacts for future sales. Far and away ahead of telephone calls. As success attends your venture you become more and more interested in merchandising for profit, and you are surprised at the ease with which a good profit can be secured.

Store Teaches Salesmanship

Maintaining a store in retail district and meeting the general public teaches salesmanship through experience. Such a plumbing store creates a feeling of independence. Figuring plans as a pastime becomes taboo. No longer does the merchant experience the well-known hunger or bust periods in his business. His business is stabilized by the very diversity of his wares. With a store open during the business hours of the day from 8 a. m. to 6 p. m., with the bell on the cash register ringing sweet music to his ears, this merchant is not concerned with competitive work at 5% below cost or 10% above. He knows his overhead. He knows the profit he must make, not only on his general line of merchandise but also on the plumbing goods he sells in order to succeed. He knows where he is going, and you generally find him whistling along the way. Customers pay more promptly because of the moral effect produced by a well-kept establishment, and a consciousness on the part of the customer that they are dealing with a first-class and up-to-date firm.

You willingly pay a higher price for a haircut or shave in a well located barber shop, well lighted, well kept and with an air of efficiency and cleanliness about it. Even the professors understand the psychology in well located, expensively furnished offices and their relation to increased fees.

Store Builds Journeyman Effort

The store also by its very nature creates in the minds of the journeyman plumbers employed the desire to sell goods, not only plumbing goods but the other articles you are handling. The knowledge that

comes to the journeyman through his eyes beats all the talking you can give him.

What is easier than for your journeyman when he has exhausted his sales effort on plumbing goods to notice other equipment in the house that should be replaced? Having seen them in the store what is easier for him to suggest than a new garden hose, electric fan, iceless refrigerator, electric lamps?

And the suggestions of your journeyman weigh heavily with a prospective customer, heavier, I am inclined to believe, than is generally conceded. The store as a permanent advertising medium is most valuable. The opportunities for creating business through the show windows of your store are far-reaching and pay big dividends in increased profits.

It is a mistake to assume that all merchandise is sold on price. It is not. The great volume of merchandise is sold by merchants maintaining well located and well appointed places of business, easily accessible, operating under a fixed policy.

Again if other businesses have found it profitable and advantageous to transact and build their business in stores, well located and easy of access to the general public, the purchasing public, there surely is no logical reason why the merchant handling plumbing goods and services should be relegated to the backwoods.

Perhaps the reason these other businesses are receiving such a large share of the consumer's dollar can be attributed to their foresight and our admittedly small, miserably small, share to our lack of a proper conception of the essentials necessary to successful merchandising. It is no idle prediction that during the next five years advances far ahead of anything yet undertaken will mark the progress of the master plumber as a merchant.

Top row: J. E. Hodgkins, vice president and New England manager, J. R. White, vice president and director of sales, Al. Engle, assistant sales manager, all of Jenkins Bros., New York City; B. O. Tilden, of C. F. Church Mfg. Co., Holyoke, Mass.; F. W. Hubbard, W. B. Hubbard & Son Co., Boston, Mass.; Lou Klinger and Samuel G. Wetzler, president, Blue Seal Chemical Co., Roselle, N. J.; John Heinkel, president, and George Quest, Blake Specialty Co., Rock Island, Ill.; Mrs. L. R. Mendelson and Mr. Mendelson, president, Hotstream Heater Co., Cleveland, O.; Thomas J. Swan, Hoffman Specialty Co., Waterbury, Conn. Second row: A. D. Harvey, sales manager, and W. M. Thomson, Nash Engineering Co., South Norwalk, Conn.; F. D. Taylor and W. L. Hancock, treasurer, Trimont Mfg. Co., Boston; H. E. Auringer and H. L. Boyer, Gould Mfg. Co., Seneca Falls, N. Y.; Miss Helen McDermott and Jack Ross, Boston manager, Reading Iron Co.; A. F. Curtin, Jr., A. F. Curtin Valve Co., Medford, Mass. Third row: W. M. Cosgrove, vice president, American Radiator-Standard Sanitary Corp., New York City; L. E. Gretter, G. E. Egan, John Ware, J. F. Carney, T. P. Kelley, all of Chase Brass & Copper Co., Waterbury, Conn.; C. O. Hollen, W. Thewes, W. W. Graw, J. B. Graham, C. H. Ingwer, president, all of Ridge Tool Co., Elyria, O.; George Herth, general sales manager, and E. B. Lane, Boston manager, both of Standard Sanitary Mfg. Co., Pittsburgh, Pa.; Thomas D. Casserly, Weil-McLain Co., Chicago. Fourth row: Ray Fallon, Frank F. Wells and O. C. Draper, all of Mueller Co., Decatur, Ill.; Joseph J. Skelly and E. H. Greene, both of Smith & Wesson Co., Springfield, Mass.; Frank Moore and F. C. Robertshaw, both of Acheson Mfg. Co., Rankin, Pa.; G. C. Freeman, sales manager, and L. A. Fisk, both of Chicago Faucet Co., Chicago, Ill.; H. W. Seymour, vice president in charge of sales, Crane Co., Chicago. Fifth row: Walter Vallett, C. C. Fox and H. F. Gillard, all of EverHot Heater Co., Detroit, Mich.; William H. Kelley and H. G. Campbell, both of B. F. Perkins & Sons Co., Holyoke, Mass.; A. E. Rowe, general sales manager, Malleable Iron Fittings Co., Bradford, Conn.; K. M. Schaefer, GarWood Engineering Co., Detroit, Mich.; E. R. Tolfree, president, "X" Laboratories, New York City; M. W. Smith, Duriron Co., Dayton, O.

Exhibits Attract Many Visitors

THE exhibition of plumbing and heating materials arranged in conjunction with the forty-eighth annual convention of the National Association of Master Plumbers was declared by many exhibitors, as well as visitors, to be one of the most successful ever held. Including many of the latest developments in the products common to the plumbing and heating industry, the booths of the exhibitors held the attention of visitors. In place of highly decorative booths, practical displays were the rule. The exhibit and convention halls were in the same building and adjacent to each other, so that all delegates and visitors to the latter were obliged to pass among the exhibits going to and leaving the sessions. Another factor adding effectiveness to the arrangement was found in the fact that much space was left at the tops of booths, permitting many open views the full length and breadth of the exhibit hall.

Among those maintaining displays were the following:

Acheson Manufacturing Company, 703 Second Ave., New York, N. Y.

American Brass Company, Waterbury, Conn.

American Radiator Company, 40 West 40th St., New York City.

American Tube Works, Somerville, Mass.

Armstrong Keti Products Company, 491 No. Park Ave., Columbus, Ohio.

Balmer, J. H., Co., 259 Plane St., Newark, N. J.

Bareham & Saunders, 366 E. Main St., Rochester, N. Y.

Beaton & Cadwell Mfg. Co., The, New Britain, Conn.

Bethlehem Steel Company, Bethlehem, Pa.

Blake Specialty Company, Rock Island, Ill.

Blue Seal Chemical Co., Roselle, N. J.

Boston Brass Co., 56 Plympton St., Waltham, Mass.

Bradford Price Book, The, Quincy, Mass.

Brennan, Martin A., 116 Warren St., Brighton, Mass.

Burnham Boiler Corporation, Irvington, N. Y.

Byers, A. M., Company, Pittsburgh, Pa.

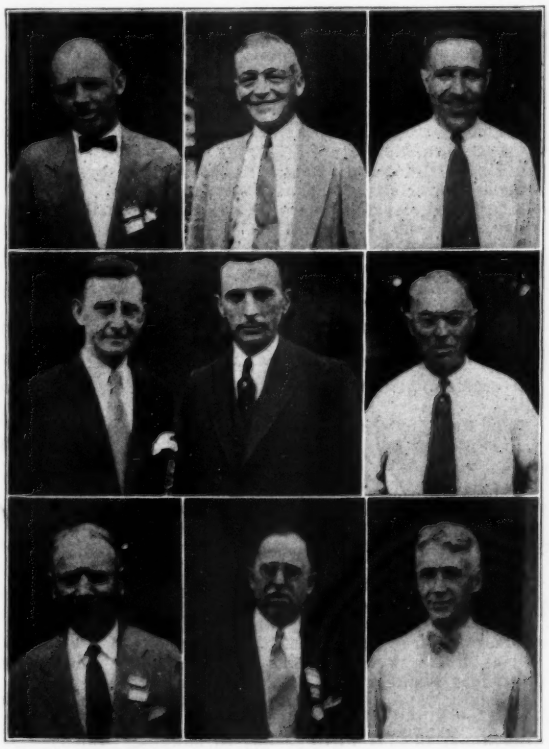
Carnegie Institute of Technology, Pittsburgh, Pa.

Carpenter & Paterson, Inc., 1190 Bennington St., East Boston, Mass.

Case, W. A., & Son Mfg. Co., 220 Delaware Ave., Buffalo, N. Y.

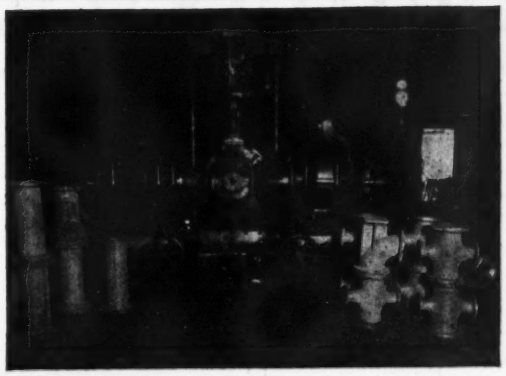
Top row: E. L. Miller, secretary Rochester association, and Mrs. E. L. Miller; L. C. Gresen, president, Rochester association, and Mrs. L. C. Gresen; A. M. Dressel, Mrs. A. M. Dressel, Mrs. Claude J. Leroux and Claude J. Leroux, all of New Britain, Conn.; Mr. and Mrs. J. F. Williams and Mr. and Mrs. J. M. Drysdale, all of Providence, R. I.; F. W. Harvey, Miss Harvey and Mrs. F. W. Harvey, all of Providence, R. I. Second row: Addiebell Longley, L. M. Longley, Charlotte and Catherine Longley, all of Norway, Maine; W. S. Ames, Flint, Mich.; C. A. McMunn, Clarksburg, W. Va.; Robert Hansen, Cincinnati, O.; Robert Pierce, Charles Robertson and Fred Robinson, president of New Bedford association, all of New Bedford, Mass.; A. A. Schmuts, Youngstown, O. Third row: R. V. Worthen, Leominster, Mass.; W. A. Johnson, secretary, Michigan association, Kalamazoo, Mich.; E. F. Whitmarsh, Taunton, Mass.; Henry Swade, Henry Diedesch and F. W. Sorge, all of Chicago; A. Jakoby and W. H. Beahm, both of Philadelphia, Pa.; C. J. Warner, Atlanta, Ga.; Joseph Singleton, president, Springfield, Mass., association; H. A. Tanffe, Newark, N. J.; A. F. Ruehl, Newark, N. J. Fourth row: Harry Felz, Boston; J. B. McDonough, J. F. Walton and C. B. Funk, all of Pittsburgh; J. E. Daly, Wallingford, Conn.; L. E. Finch, Bridgeport, Conn.; R. Handy, East Haven, Conn.; D. J. Burns and W. T. Burns, both of Wallingford, Conn.; L. J. Hickman, secretary, Newton, Mass., association; W. A. Bradford, Quincy, Mass.; J. B. Davis, Newton, Mass.; Mrs. and Mr. Ferland, Manchester, N. H. Bottom row: David Croll and L. Croll, both of New Britain, Conn.; A. G. Kerr, Waban, Mass.; James Lowe, Memphis, Tenn.; C. J. Donohoe, East Boston, Mass.; J. T. Manseau and A. D. Manseau, both of Manchester, N. H.; L. F. Bradley, F. D. Leighton Co., Manchester, N. H.; Mrs. and Mr. A. Auchinachie, Binghamton, N. Y.

Central Foundry Company, The, 420 Lexington Ave., New York, N. Y.
Central Tube Company, Pittsburgh, Pa.
Chase Brass & Copper Co., Incorporated, Waterbury, Conn.
Chicago Faucet Company, The, 2708 No. Crawford Ave. (Dept. "B"), Chicago, Ill.
Church, C. F., Manufacturing Co., Holyoke, Mass.
Conover Company, The., Chicago, Ill.
Crane Company, 836 So. Michigan Ave., Chicago, Ill.
Crest Manufacturing Co., Long Island City, New York.
Crystal Oil Burner Corporation, 1440 Broadway, New York, N. Y.
Curtin Valve Co., A. F., 76 Ship Ave., Medford, Mass.
Dahlquist Manufacturing Company, A and West Third Sts., Boston, Mass.
Decatur Pump Company, Decatur, Ill.
Dececo Co., The, 76 Batterymarch St., Boston, Mass.
Deming Co., The, Salem, Ohio.
Domestic Engineering, Chicago, Ill.
Drackett Chemical Sales Co., The, Cincinnati, Ohio.
Duriron Company, The, Inc., Dayton, Ohio.
Emerson Apparatus Co., Melrose, Mass.
Enterprise Mfg. Co., 275 Third St., Cambridge, Mass.
Eustis Mfg. Co., J. P., Cambridge, Mass.
EverHot Heater Sales Company, Detroit, Mich.
Excelso Products Corporation, 65 Clyde Ave., Buffalo, N. Y.
Fiat Metal Manufacturing Co., 1203 Roscoe St., Chicago, Ill.
Flagg & Co., Stanley G., Inc., 1421 Chestnut St., Philadelphia, Pa.
Flint Faience & Tile Co., Boston, Mass.
Frankenberg Refrigeration Cb., 116 Nassau St., New York, N. Y.
Franklin Union Tech. Institute, Boston, Mass.
Gar Wood Engineering Co., 4196 Bellevue Ave., Detroit, Mich.
Gas Industry of Greater Boston, The, Boston, Mass.



Top row: W. E. Foskett, Kewanee Boiler Corp.; W. A. Murphy, McDonnell & Miller, New York City; Philip C. Gregory, Trimont Mfg. Co., Roxbury, Mass. Middle row: C. W. Stewart, Hoffman Specialty Co., Waterbury, Conn.; E. W. Aubinger, Brunswick-Balke-Collender Co., Chicago; Adolph Mueller, president, Mueller Co., Decatur, Ill. Bottom row: Herbert E. Fleming, vice president and general manager, Conover Co., Chicago; C. E. Pullum, Bell & Gossett Co., Chicago; R. H. Hubbard, treasurer, Beaton & Cadwell Mfg. Co., New Britain, Conn.

L.F.C. HIGHEST QUALITY



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Facing three outlets with one operation.

ENORMOUS PRODUCTION FACILITIES

—a part of Lynchburg Service

NO ORDER for Cast Iron Pipe or Fittings—whether standard or special—is ever held up at the Lynchburg Plants for lack of production facilities . . . Our big equipment, modern methods and skilled labor insures the contractor or engineer "A finished on time job" . . . Those who know are "Keen" about "Lynchburg Service."

Bell and Spigot Pipe and Fittings from 4" to 48"

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Hoffmann & Billings Mfg. Co., 100 Second St., Milwaukee, Wis.
Hoffman Specialty Co., Waterbury, Conn.
Holyoke Heater Company, 90 Sargeant St., Holyoke, Mass.
Imperial Brass Manufacturing Co., The, 1200 W. Harrison St., Chicago, Ill.
Jenkins Bros., 80 White St., New York, N. Y.
Jepco Mfg. Co., 146 Tyler St., Boston, Mass.
Johns-Manville Corp., 292 Madison Ave., New York, N. Y.
Jones & Laughlin Steel Corporation, Pittsburgh, Pa.
Josam Manufacturing Company, The, 4900 Euclid Bldg., Cleveland, Ohio.
Kelly, John G., Inc., 210 East 45th St., New York, N. Y.
Kewanee Boiler Company, Inc., 570 Seventh Ave., New York, N. Y.
Kewanee Boiler Corp., Kewanee, Ill.
Kohler Co., Kohler, Wis.
Lunt Moss Corporation, 43 So. Market St., Boston, Mass.
Malleable Iron Fittings Co., Branford, Conn.
Master Plumbers' Association of Boston and Vicinity, Inc., Albert E. Roberts, Pres., 70 Washington St., Boston, Mass.
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.
Morris Manufacturing Co., 55 Emery St., Springfield, Mass.
Mott, J. L., Company, Lalor and Hancock Sts., Trenton, N. J.
Mueller Brass Co., Port Huron, Mich.
Mueller Co., Decatur, Ill.
Nash Engineering Company, South Norwalk, Conn.
National-Boston Lead Co., 800 Albany St., Boston, Mass.
National Tube Company, The 1802 Frick Bldg., Pittsburgh, Pa.
Nye Tool & Machine Works, The, 4120 Fullerton Ave., Chicago, Ill.
Oster Manufacturing Company, The, Cleveland, Ohio.
Perfect Ventilator Company, The, 22 Franklin St., Malden, Mass.
Perkins & Son, Inc., The B. F., Holyoke, Mass.
Plumbers' Trade Journal Publishing Co., 239 West 30th St., New York, N. Y.
Porcelain Tile Company, 1736 Builders Bldg., Chicago, Ill.
Radiator Specialty Company, Charlotte, N. C.
Rawlplug Company, The, Inc., 92-94-96-98 Lafayette St., corner Walker St., New York, N. Y.
Reading Iron Company, 250 Stuart St., Boston, Mass.
Redlon, O. M., Bath, Me.
Reliable Automatic Sprinkler Company, The, 250 W. 27th St., New York, N. Y.
Richardson & Boynton Company, 260 Fifth Ave., New York, N. Y.
Ridge Tool Company, The, Elyria, Ohio.
Riverside Boiler Works, Inc., 50 Harvard St., Cambridge, Mass.
Ruud Manufacturing Co., 2935 Smallman St., Pittsburgh, Pa.
Sands Heater Company of New England, The, 114 Broad St., Boston, Mass.
Scovill Mfg. Co., Waterville, Conn.
Sexauer, J. A., Mfg. Co., 2469 Third Ave., New York, N. Y.
Sloan Valve Company, 4300 West Lake St., Chicago, Ill.
Smith, H. B., Company, The, 640 Main St., Cambridge, Mass.
Smith & Wesson, Springfield, Mass.
Spang, Chalfant & Co., Inc., Vanderbilt Ave. Bldg., 51 E. 42nd St., New York, N. Y.
Speakman Company, Wilmington, Del.
Somerville Iron Works, 3637 So. Ashland Ave., Chicago, Ill.
Stack Heater Company, The, 250 Stuart St., Boston, Mass.
Standard Sanitary Mfg. Co., Pittsburgh, Pa.
Standard Tank & Seat Company, 308 No. Front St., Camden, N. J.
Stockham Pipe & Fittings Co., Birmingham, Ala.
Sturtevant, B. F., Company, Hyde Park, Boston, Mass.
Super-Vacuum Gas Appliance Co., Milton, Mass.
Taunton-New Bedford Brass & Copper Co., Division of Revere Brass & Copper, Inc., 267 West Water St., Taunton, Mass.
Teiner-Torngren Co., Everett, Mass.
Toledo Pipe Threading Machine Co., The, Toledo, Ohio.
Trenton Potteries Co., Trenton, N. J.
Trimont Manufacturing Co., Inc., 55 to 71 Amory St., Roxbury (Boston), Mass.
Turner Brass Works, The, Sycamore, Ill.

Union Metal Works, Inc., Chelsea, Mass.
United States Radiator Corporation, Detroit, Mich.
Walker Dishwasher Corporation, Syracuse, N. Y.
Waltham Oil Burner Corporation, High St., Waltham, Mass.
Walworth Company, Statler Bldg., Boston, Mass.
Webb, F. W., Manufacturing Co., 56 Elm St., Boston, Mass.
Weil-McLain Company, 641 W. Lake St., Chicago, Ill.
Wentworth Institute, Boston, Mass.
White Health Unit, City of Boston.
Wolverine Brass Works, Grand Rapids, Mich.
Woodward-Wanger Company, 1106 Spring Garden St., Philadelphia, Pa.
"X" Laboratories, 25 West 45th St., New York, N. Y.
Youngstown Sheet & Tube Company, Youngstown, Ohio.

How I Built My Business*

I HAVE been asked by Mr. Flentje to speak upon how we secure business. This is a very broad subject and were it to be fully discussed it would take considerably more time than has been allotted to me.

Strictly speaking, the methods employed can be subdivided into three. The first and most important is personal contact with the architects, owners and others to whom we look for business; the second, personal estimating of all work, and the third, personal superintendence.

The average person is usually keen to meet or know the person with whom he is doing business and it is for this reason that I consider the personal contact a very important feature.

Personal Contact Valuable

In my opinion, it is almost impossible to secure the confidence of an architect, owner or any one for that matter, without becoming personally acquainted. This, of course, I do not leave entirely to business but extend my acquaintanceship in a social way through my clubs and various social affairs that I attend. By personal contact confidence is instilled into the minds of the architects and customers and gradually as time passes and certain peculiar conditions in their work arise, they call upon me requesting advice, suggestions, or ideas, for bettering an installation or perfecting it and getting it ready for figuring. By being called in it puts me on the ground floor, so to speak; or to use another expression, it partially gives me an "in" on the job.

Not only this, but as time passes and various projects about which I have been asked have been consummated, completed and proven satisfactory, the interested parties more and more call upon me with the result that as much of their work as they possibly can they have me do, and also recommend to others that we be favored with work.

With reference to personal attention to the estimating, this, to a certain extent, is necessary to properly consummate the third reason. In order to properly

* Address by Rupert J. Weber of Chicago, delivered before the Educational Meeting of the 48th annual convention of the National Association of Master Plumbers, at Boston.

Gerstein and Cooper
COPPER BOILERS
and
HOT WATER HEATERS

Now You Can Guarantee Satisfaction

When you install Gerstein & Cooper Tanks, Heaters or Copper Range Boilers you can give your customer a guarantee of satisfaction.
They are made in every type and size and may be had in "specials" upon specification.

Write for complete catalog.

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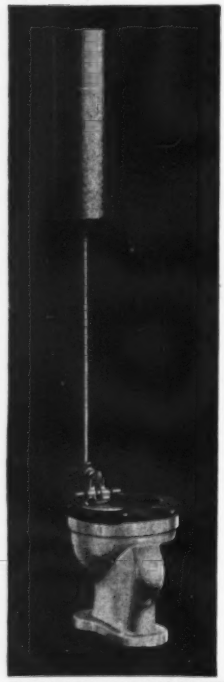
Minneapolis, Minn. — Cash Co. — 600 Washington Ave. South
Montreal, Quebec — G. Mason Price — 832 St. James Street
Baltimore, Md. — W. I. Collier Co.

The HAAS
AUTOMATIC PRESSURE TANK CLOSET
With "Master" Valve



The very next time you figure a "closet" contract for a school, factory, public building or institution, let your quotation include Haas Automatic Pressure Tank Closets. There is a range of types, styles and prices for every installation—and every Haas Automatic Pressure Tank Closet is equipped with the Haas "Master" seat action valve, already known to the trade for its mechanical perfection.

The "Master" valve can be installed over staple earthenware, either washdown or siphon jet. Bowls from your own stock or nearest supply can be used if needed quick. Backed by a quarter-century of Haas service and the ever-reliable Haas guarantee.

Ask Your Jobber

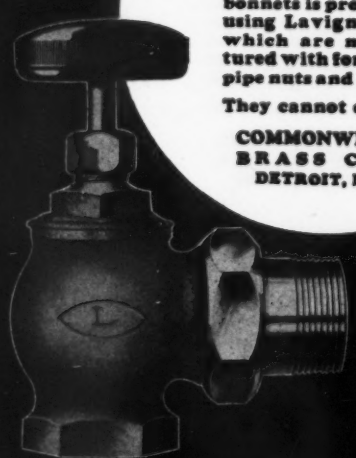
THE PHILIP HAAS CO., Inc.
Dayton, Ohio

NUT AND BONNET INSURANCE

Insurance against cracking either nuts or bonnets is provided by using Lavigne Valves which are manufactured with forged tailpipe nuts and bonnets.

They cannot crack.

COMMONWEALTH BRASS CORP.
DETROIT, MICH.



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LAVIGNE
RADIATOR VALVES

estimate a plan or any other type of installation, with or without plans, requires a visualizing of the mechanical installation. The result and benefit of this is that the picture of this particular job that is estimated stays in one's mind for future reference and enables the superintending of the job to be much more easily taken care of. By personally estimating all of the work, through my experience, I am able to detect and see certain inaccuracies, and also certain changes or additions that ought to be made in order to give a better, more workmanlike and economical installation.

This gives me the opportunity to call upon the architect or whoever is letting the work, to talk over, recommend or suggest changes before completing the estimate and in this manner become acquainted, and mean more than merely a name to the interested party.

As to personal supervision, although strictly speaking it is no more important than either of the other two methods, nevertheless, I believe that for future business considerably more can be accomplished by personal supervision than in any other way.

Personal Supervision Builds Confidence

In the first place, regardless of whether a man is building a skyscraper or changing a sink in the kitchen, it usually happens that this particular piece of work has been thought of and planned for quite some time and, in the majority of cases, is taking as much of the money as the owner can reasonably afford to spend. The result of all this is that this job, regardless of its size, is of very great importance to the owner. It behooves all of us to treat this job in a way that will give this owner the impression that to us it is also of very great importance. This cannot be done if it is left to a paid superintendent or some other employe.

I make a practice to get to every one of my jobs at least every other day. I also make it a practice to

Left to right: Mrs. George G. Gebhart, Cleveland, Ohio; George G. Gebhart, sales manager, Hotstream Heater Co., Cleveland, Ohio; George E. Carey, Jr., Boston manager, Pierce, Butler & Pierce Mfg. Corp.; F. A. Denninger, vice president, Walker Dishwasher Corp., Chicago

arrange to get around at such a time that either the architect, the owner or some other vitally interested party is at hand to see me. Furthermore, in personally superintending this work and calling at the building or other place where the work is being done, ideas for better installations, other types of installations or installations entirely foreign to the original contract, but which would be of advantage to the job, are created in my mind. On practically every new piece of work that we do, we invariably are able to make suggestions whereby we can sell more materials and labor, and ninety-nine times out of one hundred by so doing we

increase our prestige with the owner, with the result that he becomes a loyal customer and in future business invariably forgets all about competition and in addition to this he becomes a wonderful ally by recommendations to his friends.

To me the vast majority of people really do not know just what they ought to have, and have to be advised. It is a great mistake, in my opinion, to take a job as presented or specified and complete it without taking into consideration the class of building and type of owner. It invariably is the case that a better grade of materials can be disposed of, not to mention considerable additional work for which orders can very easily be obtained. It is a great mistake to sit down and wait for the customer to tell you what he wants, and it is my opinion that we have to tell the customer what he wants; or, to express it in a few words, we have to go out and lead the customer in instead of waiting until he calls us.

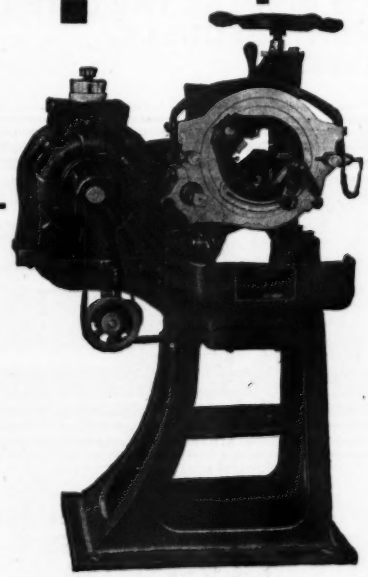
Important to Take Initiative

Due to superintending all of the work myself and being on the premises where it is being done, particularly in the case of institutions, industrial plants, mercantile buildings, etc., I not only know of the new work that we are putting in but know of all the old work that might be in any of the other buildings on the premises. By meeting and talking with the owner or his engineer or other employes I am given good tips as to what could be advised and recommended. Even though nothing is said, I am able to visualize installations that could be installed to the financial advantage of the owner. In the majority of cases I reserve most of these recommendations for future business as generally all of the available money appropriated or on hand is being spent on the one particular project that is under way. Another reason is to hold this additional work in reserve until such a time as we are not busy and then go out and make the recommendations; and I invariably secure the work, thereby keeping my organization busy steadily.

I can best illustrate this with a little story, and with your indulgence I will tell it.

Back in 1918 I figured the contract for a large manufacturing concern that was moving out of their old factory and into a new one. The company had bought an old building and our contract included the alterations to the old building as well as the work in the new building. This concern furnished part of its power to certain bending machines by a large crude oil burning internal combustion engine that was water-cooled. Our contract called for running a 1½-inch water supply to this engine and also a sewer connection. During the period that this engine was running, that is, ten hours a day, a 1½-inch stream of water continually passed through this engine and discharged into the sewer. At the time of doing the work I made a mental reservation that as soon as we slowed down in business I would design a method of saving this water, endeavor to get the business and thereby keep my organization functioning.

It was only about a year after this that things quieted down considerably and business became very slack. I should have mentioned previously that the old plant that had been purchased was at one time occupied by manu-



No. 442 Motor Driven
Range 1 to 4"

Curtis

PIPE THREADING MACHINE

Threads bends because dies turn instead of pipe.

Takes up the minimum amount of floor space.

Uses very little power.

May be hand operated during power failure.

Works faster, does better work.

A good way to save money and time.

Write us today about our purchase plan.

THE CURTIS & CURTIS CO.

318 Garden St. Bridgeport, Conn.

facturers of brewery supplies. They had used compressed air for riveting and the old compressed air tank which was a 1,500-gallon tank had been thrown out into the yard.

I drove over to see if this pneumatic tank was still on the premises and found that it was in a shed in the factory yard and that it had been painted to protect it against the weather.

A Money-Saving Suggestion

I then designed a system for conserving this water, as follows: The engine had a twenty-foot fly wheel with an axle about eighteen inches in diameter. I planned on bolting a rotary type of pump to the engine base with a belt thrown over the axle of the fly wheel for power and installing a small tank as a receiver on the discharge side of the engine to receive the water after it had passed through the engine. The outlet of this tank was connected to the suction of the rotary pump. The old pneumatic air tank was brought into the building, erected in the basement and the city water supply connected to the tank with a check valve. The discharge from the rotary pump was connected to the tank and the tank provided with a relief valve. In this way without spending one cent for power the water that passed through the engine which was absolutely clean, and had a temperature not in excess of ninety degrees, was picked up by the rotary pump and discharged into the pneumatic tank and used throughout the building for plumbing, for the high pressure boilers, hot water tank and, in fact, for every purpose, including being recirculated through the engine so that the only water loss would be that water which was used in the plumbing. All the water that previously had been wasted through the engine would be conserved.

It became necessary, of course, to install a separate drinking water system which I included in making up my estimate. The cost of this job ran approximately $2,750.

I went over to see the three main men of the plant: the president, the treasurer and the general superintendent. I explained my layout to them, showing them drawings of it, and they were very greatly interested until I mentioned the price. They then said that business was bad and they were in no position to spend the money.

I temporarily dropped the matter and mentioned to the president that I had noticed in the newspaper that he had purchased an apartment building and asked him what he expected to net on the investment. I was told 8 per cent. Knowing that the water bills of this concern were running about $250 a month, and being reasonably sure that about $175 to $200 of this expense was created by the water passing through the engine, I then asked the president if he would consider an investment that would absolutely pay him not less than 50 per cent and possibly 75 per cent in dividends. He asked me if I could guarantee that and I said, "Positively." He then asked where he could purchase an investment of that kind and I suggested to him that he pay for installing the system that I had laid out for the plant and make an agreement that the corporation pay to him the

(Continued on Page 173)

1855 - SEVENTY-FIFTH ANNIVERSARY - 1930

BY BUILDING ATTRACTIVE EXHIBIT ROOMS TO DISPLAY THE LATEST FIXTURES AND FITTINGS MOST ADVANTAGEOUSLY, AND BY INTENSIVE ADVERTISING

CRANE

IS DOING A SPLENDID JOB OF MERCHANDISING TO HELP YOU BUILD SALES. TO PROFIT FULLY FROM IT, BRING YOUR CUSTOMERS TO THE EXHIBIT ROOMS, AND KEEP A FILE OF ADVERTISEMENTS AND CONSUMER BOOKLETS IN YOUR OFFICE

THE TRADE NEWS

News of Plumbing and Heating Contractors

Tri-City Plumbing and Heating Trade Development League Elects Officers

At the annual meeting of the board of directors of the Tri-City Plumbing and Heating Trade Development League the following members of the board of directors were elected to serve as officers for the ensuing year: W. L. Stange, plumbing and heating contractor of Moline, Ill., president; L. F. Nordine of the Herman Nelson Corp., Moline, first vice president; C. C. Rosenfield, plumbing and heating contractor of Rock Island, Ill., second vice president; and Kirk A. Journy, executive secretary of the Rock Island Master Plumbers' Association, treasurer.

The newly elected officers reappointed Mr. Journy as secretary-manager of the league, and H. A. Voss, Moline, Ill., of the American Radiator Co., was elected to fill a vacancy on the board.

Following is the list of the board of directors and the newly appointed committees:

Board of directors: W. L. Stange, L. A. Wilson, L. F. Nordine, Frank Martens, E. I. Lovested, C. M. Kivlin, C. C. Rosenfield, H. F. Lamp, John C. Schmidt, Fred Pappenbrock, A. B. Dunsmore, J. M. Robb, H. A. Voss, F. R. Ervin, F. F. Brown, Kirk A. Journy and Louis Plambeck.

Activities Committee: F. R. Ervin, Fred Pappenbrock, W. H. Collins, Frank Tyler, Walter Forssman and M. L. McKay.

Entertainment Committee: L. R. Sidney, John A. Day, Henry Lamp, P. H. Beck, R. E. Feeney, E. B. Reimers, Roy F. Brasher, George Steckel, T. D. Murphy and E. I. Lovested.

Educational Committee: L. A. Wilson, George E. Collins, C. H. Kilday, A. Spoodis, E. F. Schwenke, C. H Carlson, J. M. Robb, Walter Littig and Louis Plambeck.

Sports Committee: G. J. Walther, James Corken, R. Glazier, Lawrence Atkinson and W. E. Koehler.

Sick Committee: C. M. Kivlin, W. C. Yerger and T. D. Murphy.

◆

Wisconsin Society of Plumbing Inspectors Completes Convention Program

The Wisconsin Society of Plumbing Inspectors has completed the program for its tenth annual convention, to be held at the Hotel Witter, Wisconsin Rapids, July 31 to August 1. The society has as its aims the advancement of sanitary plumbing, safe water supply and drainage, standardization of materials, uniformity of laws and regulations, and has directed its activities toward the promotion of these aims.

Well-Arranged Showroom in St. Augustine, Fla.

THIS well-arranged showroom, operated by E. J. Wishard at 58 San Marco avenue, St. Augustine, Fla., is an excellent example of the interesting display effects that can be obtained in the arrangement of plumbing and heating equipment. That Mr. Wishard is a real merchandiser is evident from the variety of equipment he has on display.

H. J. Davis, Geo. E. Dresser, Ralph Schwartz, Wm. Weach, W. E. Roush, El Reno, Oklahoma, delegation. Photos taken of the convention of the Oklahoma Master Plumbers' Association

The complete program for the convention is as follows:

PROGRAM
TENTH ANNUAL CONVENTION
WISCONSIN RAPIDS, JULY 31-AUGUST 1, 1930

PROGRAM OF MEETINGS

Important.—Meetings will take place promptly at the place and time given.

PLACE OF MEETING—HOTEL WITTER

First Session, Thursday, July 31, 10 a. m.

10:00 a. m.—Address of Welcome.....Mayor Mead
10:20 a. m.—Roll call of officers and members.
Reading of minutes of previous meeting.
Report of secretary-treasurer. Correspondence and announcements.....Eugene Morse
11:00 a. m.—President's Report.....A. J. Hanneman
11:20 a. m.—Introduction of Resolutions and Announcements.
LUNCHEON AT HOTEL WITTER.

Thursday Afternoon—1:15 P. M.

1:30 p. m.—Visit to Consolidated Water Power and Paper Co. plant and auto trip.
4:30 p. m.—1930 Amendments to State and Local Plumbing Codes.....F. R. King
4:45 p. m.—Discussion led by J. H. Owens, W. H. Leigler and George R. Stolz.
6:00 p. m.—Announcements, instruction to committees.
6:10 p. m.—Recess.
6:30 p. m.—Dinner.

Thursday Evening

7:30 p. m.—Industrial and Liquid Wastes, Their Relation to Sewage Treatment.....L. F. Warrick, State Sanitary Engineer
Local officials and others interested are invited.
8:30 p. m.—Committee meetings.
NOTE: All committee meetings to be held so that reports will be ready Friday at 10:00 a. m.

Friday Morning, August 1, 8:00 A. M.

8:00 a. m.—Possibilities and Limitations of Plumbing, Building and Electrical Inspection Under One Supervisor.....A. J. Hanneman
8:20 a. m.—Discussion.....W. C. Muehlstein, State Building Engineer, Industrial Commission
9:00 a. m.—Installation of Sewage Sumps and Ejectors Serving Buildings.
9:20 a. m.—Lake and Stream Shore Platting and Sanitation Supervision.....F. R. King
10:00 a. m.—Progress in Plumbing Apprenticeship.....
George Hambrecht, Director State Vocational Training.
10:30 a. m.—Reports of Committees.
11:30 a. m.—Plumbing Needs in the Wisconsin River Valley .....L. J. Eron
12:00 a. m.—LUNCHEON.

Friday Afternoon, August 1

1:30 p. m.—Round Table Talk—Any subject.
2:30 p. m.—Unfinished business.
New business.
Election of officers.

Committees

PROGRAM—F. R. King, chairman; H. Hoover, Wm. Meltzer.
AUDITING—(Appointed at meeting.)
RESOLUTIONS—Jacob Scheck, R. E. Hasselkus, M. J. Murray.
EDUCATION AND PRESS—F. R. King, Emil Disch, A. J. Hanneman.
ENTERTAINMENT—A. J. Hanneman, chairman; John Owens, William Leigler.
MEMBERSHIP—Eugene Morse, R. E. Hasselkus, J. H. Owens.
RESEARCH AND STATISTICS—Jacob Scheck, J. H. Peppard, F. R. King.
CONVENTION CITY—R. E. Hasselkus, Geo. Slightam, Wm. Isleb.
LAWS AND REGULATIONS—V. A. Landowski, F. E. Klement, Wm. Streich, A. Jamesson, G. R. Stolz.
AFFILIATION—Wisconsin League of Municipalities, F. R. King, R. E. Hasselkus, Roland Henke, William Meltzer.

◆

Plumbers' Pleasure Club of Chicago to Hold Annual Picnic

The North and West Side Master Plumbers' Club of Chicago has announced its annual basket picnic for July 16, at Viani's Grove, Park Ridge, Ill. Dancing, music, refreshments, athletic events and prizes are the program for the day.

Robert Nelson is chairman of the arrangement committee, and he will be assisted by H. E. Skibbe, Cal Heagle, George Matthews, Edw. Benning, Harold Stift and L. P. Markowski.

◆

Maryland Association Exhibits at "Home Show"

The Association of Master Plumbers of the State of Maryland, Inc., maintained an exhibit of plumbing fixtures at the Better Homes Show sponsored recently by the Real Estate Board of Baltimore, Md. The exhibit was held at the 5th Regiment Armory, and the association's booths were arranged by Samuel E. Houck, who is chairman of the publicity committee of the association.

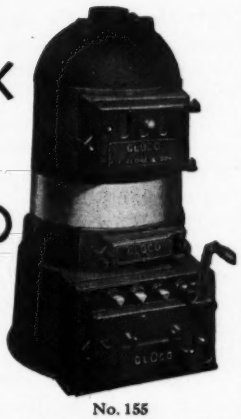
The display included a complete bathroom, consisting of a built in tub of green, with a green shower curtain, a green closet combination with a green mother of pearl toilet seat, a pedestal lavatory of green; the tile work was of green and white, and large ferns adorned the posts about the room, creating a handsome effect. This colored bathroom attracted a great deal of attention, and some of the members who were on duty at the show have already received contracts for bathrooms similar to the display.

Another exhibit was a kitchen, consisting of a green double-drainboard sink, a green laundry tub, green block tiling, and green and black linoleum. A gas range of green and white, a kitchen cabinet in white and green, and a window draped with green curtains, made a most fitting scene.

A fashion exhibit was held each evening, the models parading up and down a large runway which passed

John Kerrigan and Herbert Parrant, both of Lewiston, Me. Photo taken at the recent convention of the Maine Master Plumbers' Association

TAKE A LOOK AT THIS NEW GLOCO



No. 155
(Also in larger capacity—No. 280)

There are many who prefer the round-dome Tank Heater. So we have added these attractive models to the GLOCO family. Nos. 155 and 280 have EVERYTHING in Tank Heater improvements, including the exclusive GLOCO fine-mesh separate-shaking grate which burns the cheaper sizes of coal. Get in on the GLOCO popularity! This is the Tank Heater season.

Remember, 45 different sizes to choose from—each GLOCO tested to 300 pounds, and guaranteed to 125 pounds working pressure.

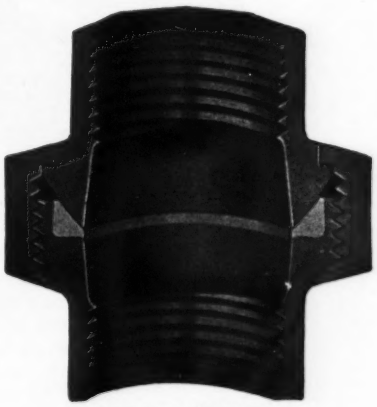
Write us and we'll send you complete information.

EVINS F. GLORE & SON, Inc.
Grand Central Terminal Bldg. New York City

"LOOK FOR THE RED BAND OF QUALITY"

TRADE MARK
GLOCO
RED BAND TANK HEATERS

IMICO UNIONS

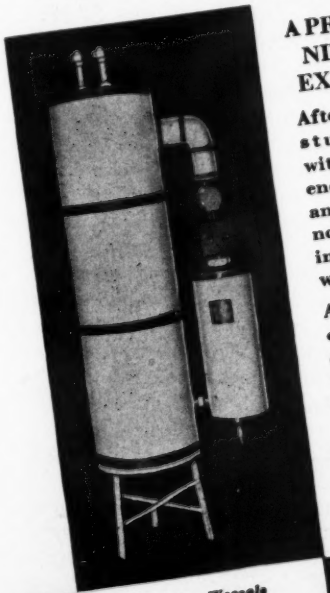


NOTE THE BRASS DISC

Made of refined Malleable Iron with Brass Seat inserted in place by powerful pressure so that it cannot become detached.

Approved by Underwriters' Laboratories.

ILLINOIS MALLEABLE IRON CO.
Chicago, Ill.
Manufacturers Full Line Iron Pipe Fittings



A PRODUCT OF NINE YEARS EXPERIENCE.

After an exhaustive study, coupled with our experience in production and operation, we now offer our new improved electric water heater.

Almost 100% efficient and practically foolproof we offer it for sale through the plumbing trade.

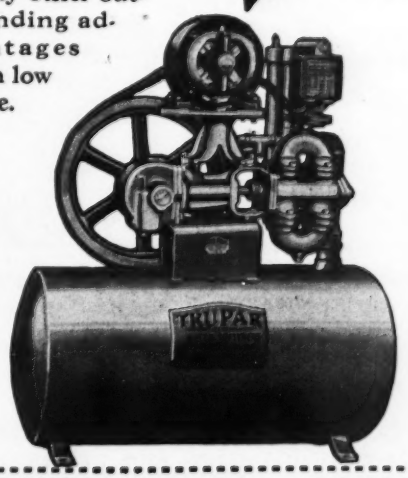
Any plumber can sell it with absolute confidence.

The New Wessels Electric Water Heater

D. D. WESSELS & SONS CO.
DETROIT, MICH.

Electric Wessels QUALITY WATER HEATER

A complete, self-contained system combining sectional construction and many other outstanding advantages with low price.



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Gentlemen: 7-12
Send me particulars of Trupar pumps, water systems, and water softeners.

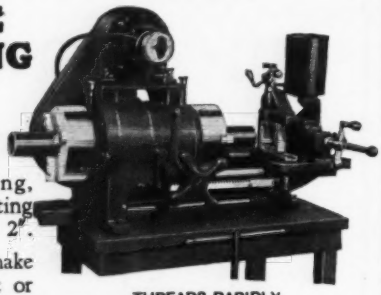
Name.....

City..... State.....

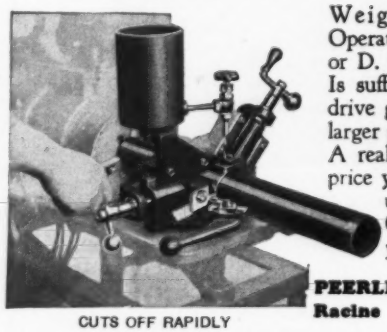
CUTS PIPE THREADING COSTS!

A full-fledged Portable Pipe Machine for Reaming, Chamfering, Threading and Cutting Off pipe from 1/8" to 2".

Uses any standard make of solid square right or left hand pipe or bolt dies.



THREADS RAPIDLY



CUTS OFF RAPIDLY

Weighs 250 pounds. Operates off either A. C. or D. C. lighting circuits. Is sufficiently powered to drive geared heads on the larger pipe, up to 6 inches. A real pipe machine at a price you can afford. Ask us about it today. Give us the name of your supply dealer

PEERLESS MACHINE CO.
Racine - Wisconsin

"CHICAGO"
Pipe Threading Machines Production Precision
Latest and Most Advanced Types on the Market
Chicago Pipethread Machine Co., Racine, Wisconsin
Offices and Factory: 1621 Racine Street

Donnelly Outer Spring Relief Valve

There's a lot of business and profit waiting for you in your community through the sale of Donnelly Outer Spring Relief Valves. They provide the safe, all-time protection against pressure accidents on the heating system. Your customers want them. Are you selling them?

Ask your jobber for details or write us for full information and prices. But write today, before you forget.

DONNELLY MFG. CO. Inc. - 29 MILLS STREET, MALDEN, MASS.

New York Representative: Henry Stein, 50 Cliff St., New York City; Philadelphia and Southern Territory Represented by Derbyshire, Mack & Morgan, Inc., Delaware Ave. and South St., Philadelphia, Pa

right alongside the association's booths, and in this way many of those waiting for the fashion display lined up in front of the plumbing exhibit and had ample time to examine the display in detail.

The board of directors of the association and many of the members were detailed each afternoon and evening to serve at the booths and were usually kept busy answering questions.

The attendance at the show this year far surpassed that of previous years; approximately 50,000 persons attending during the week. A broadcasting program over the radio each morning gave a list of those having exhibits at the show, and at the same time mention was made of the goods on display.

This makes the third year that the association has taken part in the Better Homes Exhibit and each year many of the members have received orders at the display.

◆

Utica, N. Y., Association Has New Secretary

Thomas Hughes, who for the past several years has been secretary of the Utica (N. Y.) Association of Master Plumbers, resigned recently. Lloyd Laterman has been appointed to succeed Mr. Hughes as secretary of the association.

◆

Chicago Contractors Play Pickwick Course

The Plumbing Contractors' Association of Chicago held its monthly golf tournament at Pickwick Suburban Golf club, near Glenview, Ill., on June 12. The day was clear and bright, but a strong wind made it difficult to control the ball.

Blind bogey for the day was won by Charles S. McKay. The flight winners were: Peter Munn, Ed. Ehrlich, William Zeigler, J. V. Liddy, A. M. Boosey, E. A. Mortimer, James Bonga, William J. Woolley, L. T. Lange, Charles McIver, John Blair, H. P. Reger, John MacKenzie and S. Anderson.

A. G. Peterson won first place in Class A, with a net 71, second place went to Thomas Litvin, net 74, and third place was taken by Ralph Reedy, whose net score was 77.

In Class B, Charles A. Dreier, with a net score of 75, was first. Frank Winkler, net 81, and Charles Thumm, net 82, finished second and third, respectively.

First place in Class C went to W. J. Sievert, whose net score was 60. Walter Brown took second place with an 82 net and William Knauss, with an 83, placed third.

Among the guests, Ed Payne took first place in Class A, shooting a net 72. W. Karkow was second with a 74 and John Fitzsimmons took third with a net 77.

In Class B for the guests, first place went to Milton Miller, whose net score was 67. William Hildeman's net 72 gave him second place and the 75 turned in by Charles McIver gained third place for him.

Following are the individual scores for the tournament:

	G.	H.	N.		G.	H.	N.
Anderson, Paul...	106	22	84	Dreier, Chas.	102	27	75
Anderson, S.....	99	22	77	Durdin, M.	106	20	86
Barr, W. N.....	113	31	82	Ehrlich, Ed.	116	40	76
Blair, John	118	27	91	Erickson, C. J...	103	19	84
Bonga, J.	102	23	79	Fabri, F.	108	23	85
Boosey, A. M....	106	19	87	Fitzsimmons, J. T.	96	19	77
Brookman, W. R.	127	33	94	Flinder, R. C....	99	12	87
Brown, Walter...	122	40	82	Harvey, Wm. ...	93	13	80
Diedesch, Henry.	113	29	84	Hildeman, W. F..	102	30	72

	G.	H.	N.
Hilton, R.	153	40	113
Hilton, W. S	115	30	85
Jacoby, Paul	142	39	103
Jones, Chas. W.	103	15	88
Karkow, W.	91	17	74
Knauss, Wm.	115	32	83
Lange, L. T.	93	15	78
Liddy, J. V.	110	28	82
Lind, E.	115	30	85
Litvin, Thos.	88	14	74
McIver, Chas.	101	26	75
MacKenzie, John.	95	18	77
Matthews, Geo.	135	39	96
McKay, Chas.	111	29	82
McKenzie, K.	108	24	84
Miller, M.	91	24	67
Mortimer, Ed.	98	19	79
Munn, Peter	113	23	90
Payne, Ed.	91	19	72
Peterson, A. G.	89	18	71
Pillar, H. R.	127	40	87
Reedy, R. B.	85	8	77
Reger, H. P.	106	21	85
Robertson, H. E.	107	23	84
Savage, Clyde	108	17	91
Scheel, Herman.	112	27	85
Schulhoff, M.	100	21	79
Sievert, W. J.	92	32	60
Stearns, G. R.	120	25	95
Thumm, Chas.	106	24	82
Winkler, G. F.	106	25	81
Woolley, W. J.	99	17	82
Young, Ed.	107	16	91
Zeigler, Wm.	98	18	80
Zimmer, Fred	105	16	89

Utah Association Plans Active Summer

The Utah State Association of Sanitary and Heating Engineers is already starting to assemble its ball players for the annual game, or what may be games, with the journeymen's team, according to President A. H. Higham. The first practice of the season has just been held, with a good turnout of master plumbers and wholesalers' representatives, who compose the masters' team, as there are not enough contracting plumbers of the ball playing age to cope with the comparatively younger team of the journeymen.

Mr. Higham will visit southern Utah during July

Top row: A. C. Hughes, Norwalk; Mrs. N. Hamilton, Stamford; Mrs. J. McNamara, Stamford; Miss Agnes McNamara, Stamford; Mrs. James Perone, South Norwalk; W. Hamilton, Stamford. Middle picture: Mr. and Mrs. J. L. Landgren, Berlin, Conn. Bottom row: Mr. and Mrs. J. L. Fierberg, Mrs. M. A. Fierberg, Mrs. J. Bishoff, M. A. Fierberg, all of Hartford. Photos taken at the convention of the Connecticut Master Plumbers' Association

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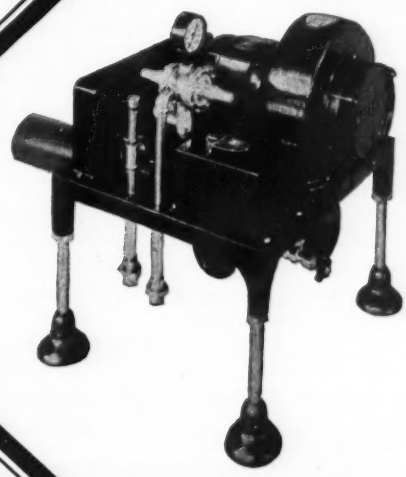

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and at that time plans to call on the masters of the central and southern part of the state.

Mr. Higham also expects to visit Logan and Brigham City, in the extreme northern part of the state, in the immediate future, with the view of forming a local in those two cities. Mr. Higham, Joseph F. Carthey, vice president of the Salt Lake City association and treasurer of the state organization, and W. A. Rupea, secretary-manager of the Salt Lake City association, have just returned from a visit with the Ogden Association of Sanitary and Heating Engineers.

◆

"Kentucky Night" Celebrated by Western N. Y. Chapter

The Western New York Chapter, A. S. H. V. E., met at the Hotel Statler, Buffalo, N. Y., on May 12, to celebrate "Kentucky Night," which is an annual event of the organization. The guests of honor were Dean F. Paul Anderson and his University of Kentucky senior engineers. The meeting was the largest of the year in point of attendance. Fletcher H. Burke, president of the chapter, presided.

George F. Fisk, commissioner of public works, welcomed the visitors to the city of Buffalo. L. A. Harding, national president of the organization; Cecil Farrar, national treasurer, and Roswell Farnham, a member of the council, spoke briefly.

Henry Rexinger, C. A. Booth, Fred Zander, Walter H. Trask, Ralph Coe, Dean Anderson and Mrs. Olive E. Frank were among others to address the gathering. J. W. Pennell responded for the Kentucky engineers.

The speaker of the evening was Samuel B. Botsford, executive vice president of the Buffalo chamber of commerce.

Besides Dean Anderson, the University of Kentucky was represented by W. E. Freeman, assistant dean of the college of engineering, L. S. O'Bannon, professor of steam engineering, J. B. Dicker, superintendent of shops and head of the department of practical mechanics, and the president of the senior class, John C. Benson.

The April meeting of the chapter was held at the Hotel Buffalo, with approximately seventy-five members present. After the dinner and preliminary business, plans for the mid-summer convention were outlined by Roswell Farnham. The members listened to a most interesting and instructive talk by John H. Curtin, of D'Youville College, who spoke on "The Sun, the Big Furnace of Little Earth, or the Source of All Energy." Professor Curtin is a scientist and astronomer of international repute. He illustrated his talk with stereoptican slides of solar views, most of which he had photographed himself from his observatory at High Point, N. Y.

◆

Ontario Chapter, A. S. H. V. E., Elects Officers

The Ontario (Canada) Chapter of the American Society of Heating and Ventilating Engineers recently elected H. F. Church president, succeeding M. B. Watson. H. S. Moore was named vice president, and H. R. Roth secretary.

The guest speakers at the meetings were L. A. Harding, president of the American Society of Heating and Ventilating Engineers, and C. W. Farrar, treasurer.

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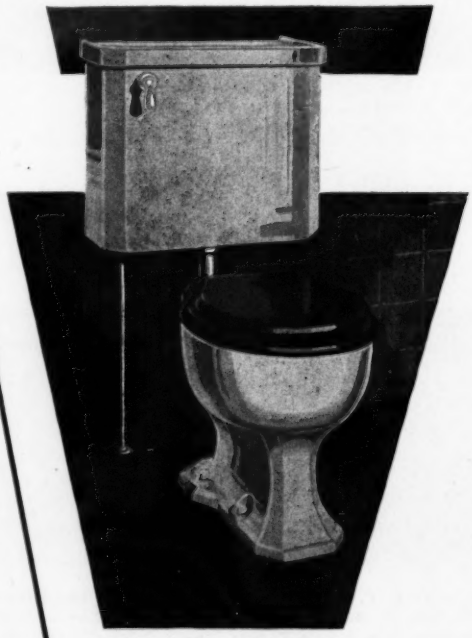

ROUGHING-IN 12" AND 14"

Left to right: H. B. DeLong, Spokane; W. W. Cox, Seattle; H. R. Crane, president of P. & M. Mfg. Co., Los Angeles; B. H. Campbell, P. & M. Mfg. Co., Seattle. Photos taken at the convention of the Washington State Association of Master Plumbers

J. D. Cassell of Philadelphia, Pa., was also present. Mr. Harding spoke on solar energy, while the other two guests spoke on society membership.

◆

Wm. J. Woolley Resigns As President of Wolff Co.

William J. Woolley resigned July 1 as president of Wolff Co., Chicago. H. I. Worden is now executive vice president in charge of sales and William Mahoney is executive vice president in charge of production. Mr. Woolley formerly was secretary of the National Trade Extension Bureau.

◆

Leaves on European Trip

Fred J. Hotop, plumbing, heating and ventilating contractor of 315 North Church street, Kalamazoo, Mich., sailed June 13, on the S. S. Homeric, for a three months' trip to Europe.

◆

Milwaukee P. & H. Club Plays Waterford Woods Course

Executives of the various branches of the plumbing and heating industry, including masters, jobbers and sales managers of manufacturers, of Milwaukee, Wis., have organized a recreation and athletic club under the name of The Plumbing and Heating Club of Milwaukee. The organization is purely social and has been formed to further develop friendly relations between the leading men in the industry. Louis R. Schmaus heads the new club as president and William H. Emory, local

Left to right: L. J. Miller, Mobile; C. J. McGrath of Mobile, vice president of Alabama state association; J. H. Crump of Birmingham, state secretary; W. T. Perry of Montgomery, past state president; Mr. Baum, Birmingham; W. Wilby, Selma. Photos taken at the convention of the Alabama Master Plumbers' Association

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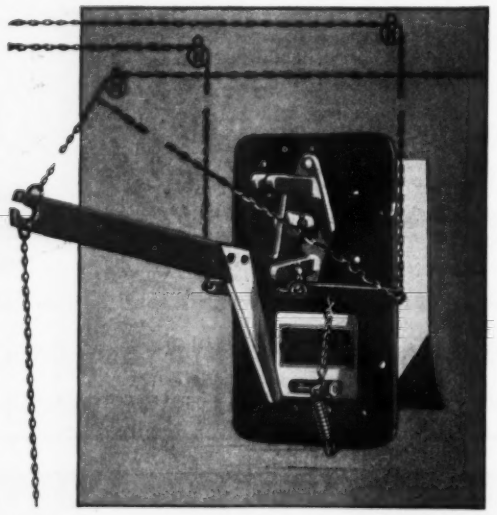

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No one wants to bother with hand set checks and drafts these days. No one wants to bank a fire every night and then wait for it to come up in a cold house next morning.

Tell them about Robertshaw automatic control . . . how it saves 20% of the coal bills . . . how it opens and closes the dampers *gradually* thereby preventing damage to the fire-pot . . and how easily it can be installed because it is non-electrical.

Here are extra profits all ready for you —write today for the complete details of our introductory proposition.

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Youngwood, Pa.

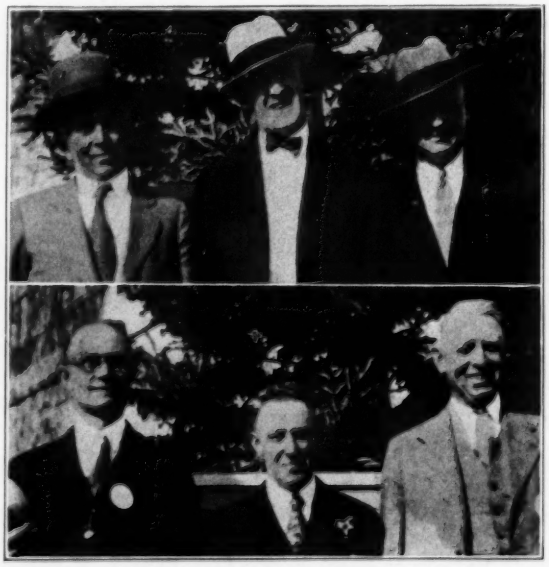
manager for the American Radiator Co., New York City, is secretary and treasurer of the new Milwaukee organization.

The club recently held its initial sports event, a golf tournament, at the Waterford Woods Golf club. George J. Roska of the United Plumbing & Heating Supply Co. heads the golf committee as chairman and has as co-workers Edward A. Knab, Arthur Boettcher and William St. Bernard, sales manager of the Imperial Brass Mfg. Co.

All branches of the industry were represented at the first tournament, when 85 turned out to participate in this all-day affair. Prizes in the golf event and the winners were as follows: Driver to Frank Mueller in the blind bogey; golf bag to C. R. Gunther, low gross; golf balls to Peter Vogt, high gross score. Many fine scores were turned in and the interest taken by all members proved to make the day very successful. Mr. Roska and Mr. Emory saw to it that all the members were well cared for throughout the day. Mr. Knab was instrumental in seeing to it that everything on the course was running smoothly, while Mr. St. Bernard started off the foursomes and acted as official scorer.

Not satisfied with golf, some of the members deviated from the regular event and conducted a barn-yard golf tournament. The horseshoe pitching contest was conducted by Mr. Knab under all the rules and regulations available. At the windup of a hotly contested series of eliminations Harry Miller was declared the champion horseshoe pitcher of the club and was awarded the capital prize, consisting of a set of new regulation horseshoes.

The second event of season was the golf match between the Plumbing and Heating Club of Milwaukee and the Western Trade Golf Association of Chicago, Ill., which was played at the Glen Flore Country club, Waukegan, Ill., on Thursday, July 10.



Top row: T. W. Murphy, W. J. Moran, Frank J. Cooney, plumbing inspectors of Hartford. Bottom row: O. A. Peterson, New Britain; Maurice E. Wallen, West Hartford; Ray C. Arnold, Bristol. Photos taken at the convention of the Connecticut State Association of Master Plumbers

N. A. M. P. Convention

(Continued from Page 164)

savings in the water bill. This he agreed to do, but as soon as he did so the treasurer and general superintendent interfered and said that if it was to be done it would have to be a plant proposition; so that all I had to do was to sit back and let them argue it out as to who was to pay for the job.

I got the order for the work that day and while working installing this system the plant received several million dollars worth of orders which made it necessary for them to install considerable extra equipment, such as furnaces, ovens, more plumbing, etc., with the result that my men were in that plant for nine months and our bills totaled over $29,000, all done on a time and material basis.

I might mention that a couple of months ago I was at the plant, and my water saver is still operating. The largest water bill that they ever had was less than $50.00.

If it had not been for the fact that I personally supervise all of my work and know just exactly what is going on the chances are ten to one that the thought of designing this system would never have occurred to me at all. I can truthfully say that in the course of a year we pick up not less than $75,000 worth of work by making recommendations, the ideas for same being created on the same basis as the one I have just illustrated, namely, by personal supervision of work.

◆

H. & V. Golf Association Holds Second Tournament

The second meet of the season for the Heating & Ventilating Golf Association of Philadelphia, Pa., was held at St. David's Golf club, on Wednesday, June 18. John S. Hemphill, Jr., K. S. Jacobsen and H. W. Rickabaugh were the hosts for the day, and those in attendance enjoyed the privileges of the spacious new club house and the exceptionally fine course.

William Hughes, shooting a 70, won the H. J. Carr trophy cup for the second consecutive time. One more victory gives Mr. Hughes permanent possession of this cup. He also won 4 balls for 1st prize in the morning round.

Thomas W. Cooper played a round in the morning for a gross 77, the best score of the day. His net 72 entitled him to 2nd prize and 3 golf balls. M. Blankin and H. J. Carr received 2 balls each for 3rd and 4th prize, respectively. J. H. Hemphill, Jr., came in for 5th prize and 1 ball.

In the afternoon round, Roy Eichberg took 1st place and 4 balls. Second prize went to Capt. William P. Culbert with 3 balls as his reward. Two balls each went to L. Daub and John Murdoch for 3rd and 4th prize, respectively. One ball and 5th prize went to B. Pennypacker.

The next meet will be held at the Pine Valley Country club, Clementon, N. J., July 16, with Mr. Thomas W. Cooper as host. The scores for the day follow:

	G.	H.	N.
T. W. Cooper...	77	5	72
J. H. Hemphill.	87	8	79
M. F. Blankin..	88	8	80
Wm. P. Culbert.	88	10	78
K. S. Jacobsen.	97	12	85
J. Murdock.....	94	12	82
A. McClint'k, Jr.	108	16	92

	G.	H.	N.
J. Young.....	102	20	82
H. J. Carr.....	98	21	77
Wm. Hughes...	93	23	70
W. R. Eichberg.	100	23	77
G. W. A. Kapell.	97	24	73
L. Daub	106	23	81
B. Pennypacker.	110	27	83

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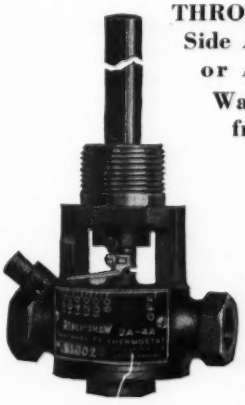

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Offer Improved Data on Welding and Estimating

THE Heating and Piping Contractors National Association held its forty-first annual convention at the Hotel New Yorker, New York City, June 16 to 19. Walter Klie of Cleveland, Ohio, was re-elected president of the organization. Ray L. Spitzley of Detroit, Mich., was made vice president and Robert D. Williams, New York City, was elected treasurer.

The first part of the report on the convention appeared in the June 28 issue of DOMESTIC ENGINEERING, and the following, which deals with committee reports, concludes the story:

Welding

John H. Zink of Baltimore, Md., in the sub-committee report on welding said:

"An important undertaking of the Sub-Committee on Welding this year was the preparation and publication of a Standard Manual on Pipe Welding. This manual, when completed, will serve as a reference volume for the contractor and his journeymen, as a textbook for the instruction of fitters, and as a guide for architects and engineers.

"The manual is in process of preparation by the Educational Department of our National Association, and we expect to have it ready for distribution by the end of the year. Grateful acknowledgment is made to *Air Reduction Sales Company* and *Linde Air Products Company* for valuable assistance received from them in this program of the preparation of the manual."

An outline of the contents of the manual was given through titles and sub-titles. Further the report stated:

"Chapters 1 to 9 inclusive, Chapter 12 and Chapter 17 have already been completed. This involves about 260 pages of what when completed will be a 400-page manual.

"The committee recognizes the potential possibilities in welding for the entire membership of the National Association, and offers its services to any member of the association needing assistance in any phase of welding. Members should submit requests to the Educational Department of the National Association which acts as the clearing house for the work of the committee.

"Probably the most outstanding accomplishment of the committee this year has been the development of the 'Specifications and Standards Covering Workmanship, Design and Construction of Fusion Welding of Heating and Other Piping.' These specifications and standards have been prepared by the Educational Department of the National Association in co-operation with our committee on welding and the editorial committee on the Standard Manual on Pipe Welding. They have been approved by the committee on welding, by the standardization committee, and by the board of directors, and are submitted here for adoption by the convention."

The Report of the Committee on Standards

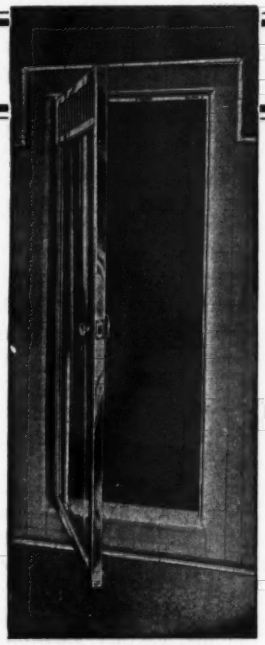
Terming the committee on standards as one of outstanding importance, President Klie called for its report. In offering the report, which first drew attention to the work of broadening the Engineering Standards, the fundamental data of which were first established in 1923 and have since been thoroughly tested and their accuracy proved, Mr. Franklin said:

"Through co-operation with the American Society of Heating and Ventilating Engineers, we are enabled to supply our members with their complete data on coefficients of transmission, and for the sake of uniformity are publishing it in the identical form in which they published it. This will increase the available data on this one subject alone over one thousand per cent.

"To make this mass of data readily available, it seemed advisable to change the form of the Standard Radiation Estimating Table, which you will remember was set up to cover a few common types of construction so that it would be usable for any type. To accomplish this fact, we have changed this table, so that the factor "K" as

Photograph taken at the "Old Guard" dinner, given in honor of Henry B. Gombers, at the recent convention of the Heating and Piping Contractors National Association

..C&S Shower Doors..



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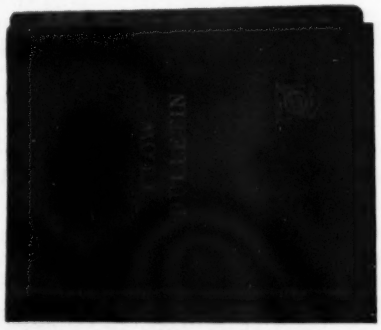

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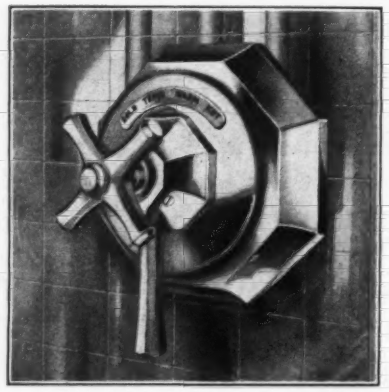

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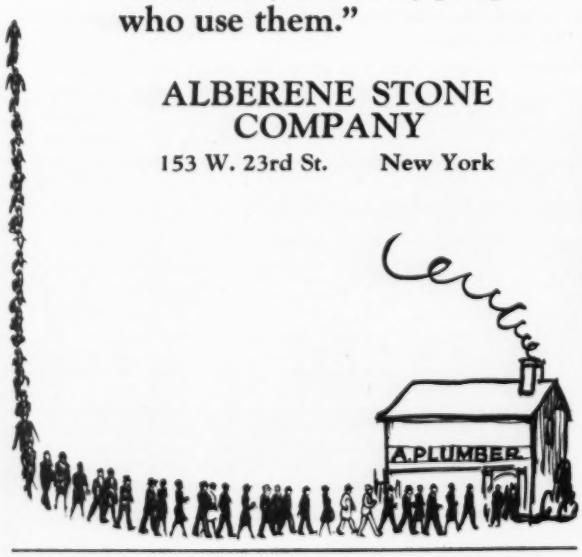

now printed will be set up in uniform increments from 1/10 to 1, leaving spaces above each coefficient in which the member may indicate the particular type of construction to which this coefficient applies. This does not change the method of use of the table in the slightest and has the added advantage that it may be used for any coefficient. Even though the coefficient itself is not listed, it would still be possible to read values for it by interpolation.

"In a similar manner, coefficients are set up in the second section of the table for those areas which are not directly exposed to outside conditions, such as floors, walls and partitions, and this section is treated in a manner exactly similar to that outlined above for the outside exposed surfaces.

"For purposes of simplification and standardization, the committee recommends that only one Standard Radiation Estimating Table be published, that one being calculated on a base temperature of 0 deg. To make such a table applicable to all parts of the country, it will be necessary to provide a new table of exposure factors, which will have combined with them a temperature factor for the particular city for which they are designed. In this way, everyone will use the same Radiation Table, and the only difference in calculation will be the use of the combined exposure and temperature factors for their particular city. It will, of course, be necessary to publish temperatures separately from exposure factors for use in determining radiation for those areas not exposed to outside weather conditions, such as floors, ceilings and partitions.

"New data on the Enclosed Radiators of the cast iron pattern will be included to bring this matter more nearly up-to-date.

"Part II of the Revised Standards will be devoted entirely to the Boiler Selection Data of the Sub-Committee on Boiler Output.

"Part III will be devoted entirely to Steam Pipe Sizes, in which data there has been no material change, except that when this data is published on the larger size page, it will be much more legible and, therefore, of greater service.

"Part IV of the Standards will be devoted to Dimensional Data on Valves, Fittings, Flanges, etc., and will be quite complete as far as those fittings are concerned which have been adopted by the American Standards Association and sponsored by this Association.

"This revised book is now in the hands of the printer and should be available for distribution in the very near future. Due to the unusual expense the publication of this book entails, your committee recommends that it be sold to members at a nominal price, to be determined by the Board of Directors.

"In addition to the work of revising the Engineering Standards, your committee has carried on its regular work. One of these items is the analysis of Weather Bureau data for additional cities, and Weather Bureau data for six new cities has been analyzed and the base temperatures and exposure factors determined for these cities. This branch of the work must continue, it being the aim of the committee that no city over 100,000 in population shall be without Weather Bureau data analysis, and as soon as this data can be compiled it will be distributed to the members.

"Your committee has continued its active co-opera-

tion with other organizations interested in similar work, and it appears now that one of the results of this co-operation will give us information from which we can provide our members with accurate data for sizing hot water piping. Research work is now nearing completion on this subject at the Agricultural and Mechanical College of Texas, and we feel that this gap in our Standards will soon be filled."

The Quantity Survey Bureau

The facts surrounding the establishment and operation of the Quantity Survey Bureau at Buffalo, given by Mr. Danforth, carried the information that it is functioning well and has received the recognition of consulting engineers, architects, and general contractors. The idea, Mr. Danforth said, was sold generally at a dinner attended by representatives of the building industry on the basis of its economy and as a means of expediting estimating through the elimination of duplication in taking off quantities. He expressed the belief that a program of certified heating can easily be worked in with the program of the bureau. "The plan includes," he further said, "a schedule of labor and materials on a work sheet, so that labor can be quickly estimated by the individual members. Interesting features concerning the establishment of the bureau are that those members hardest to sell are now the most thoroughly sold, and that the proposition should become a real economic factor in the industry."

At the close of Mr. Danforth's talk Mr. McGinness said that the idea is close to his organization in Pittsburgh, as it is following along similar lines, and that, while membership in the bureau is not limited to members, all the stock is owned by heating contractors. The question of whether or not members of the Buffalo bureau solicit plans brought a reply in the negative. Mr. Merrill cited a pipe covering bureau in Boston which operated nicely for members until builders began dealing with non-members. Another point made was that commercial houses in some cities will at a high cost guarantee surveys. To all of this in a brief summarization, President Klie replied that it is not intended that the bureau be a cure-all but rather that it is an effort toward giving the contractor low costs in quantity take-offs and providing intelligent costs which put non-members too low or too high at a disadvantage.

On the question of boiler loads, a delegate asked for an expression of the reaction where manufacturers guarantee their boilers for a larger load than that which is set by the association standards' charts. A response from Mr. Hart indicated that a difference of opinion exists concerning what the demands on a boiler will be, with insufficient consideration given to the demands after banking. Most manufacturers, he continued, test under ideal conditions, which cannot always be duplicated in actual service, and little or no allowance is made for dirty or leaky chimneys. The committee on boiler output, he concluded, leans backward a little to avoid possible failures.

Old Guard Dinner

The Old Guard Dinner given June 16 in the ballroom of the New Yorker Hotel, New York City, during the convention, in honor of Henry B. Gombers who was for 33 years secretary of the organization, was attended by

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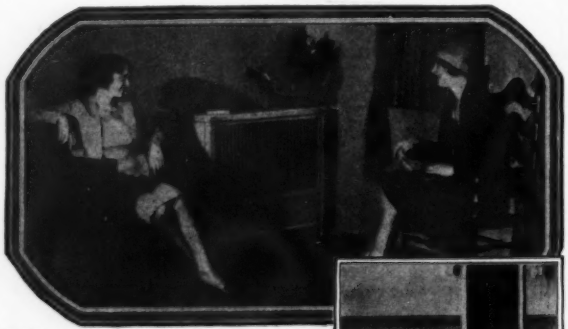

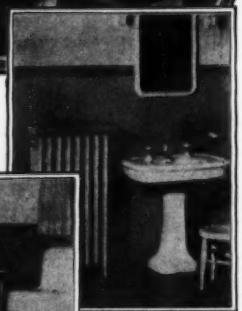

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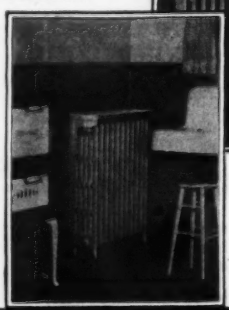


Our tried-and-tested plan offers you a practical method of obtaining this profit. Write us today.

Armstrong Radiator Shields & Enclosures

a number of the many friends which he made during his period of service. Stewart Jellett of Philadelphia, who was president of the association from 1901 to 1905, acting as toastmaster introduced several speakers.

Walter Klie, president of the association, was the first, followed by P. Gormley of Philadelphia, who was president during 1905 and 1906 and John E. Rutzler of New York City, who was president during 1920. Each indicated the high esteem in which Mr. Gombers is held and the great contribution he made to the development of the association. Mr. Rutzler also read a number of letters from friends of the guest, who were unable to be present, each of which bore an indication of esteem.

Mr. Jellett presented Mr. Gombers with a cashier's check and suggested that he have Mrs. Gombers use it in any way they saw fit. In response Mr. Gombers thanked the association membership for the support which they had given him throughout the years he served as secretary. The dinner marked the resignation of Mr. Gombers and he was later made secretary-emeritus. Other guests at the dinner were Mrs. Gombers, E. W. Gombers, a brother; A. R. Palmer, Charles Brodek and J. C. Howell.

◆

Oil and Oil Burners Discussed at California Trade Gathering

How efficient is oil as a fuel, and what about the future supply? How big is the burner industry and what does it mean in the heating field? Answers to these and other questions relating to oil burning equipment and supplies were developed in the talk of Fred C. Eckhardt, sales manager of E. A. Cornely Co., Inc., distributors of oil burners, before the May 8 meeting of the Plumbing and Heating Club of San Francisco, Calif., and the bay district.

"By reason of the immense petroleum resources of this state," said Mr. Eckhardt, "California is the cradle of the oil burner industry, which now employs well over 5,000 persons." Pointing to the advantages accruing to the heating contractors who are working with the burner people, the speaker urged a still greater measure of co-operation. As to the supply of oil, the speaker quoted statistics which set at rest any alarm as to a possible shortage which might work a hardship on those depending on fuel oil for heating, either with regard to higher prices in the face of a dwindling supply, or an actual shortage.

An unfortunate condition exists in San Francisco, it was shown, where oil burning equipment is sold under the tremendous handicap of an antiquated ordinance which provides that the tank shall be placed below the boiler level under the front sidewalk, which boosts the price of the installation almost 40 per cent due to the cost of setting the tank.

At the conclusion of Mr. Eckhardt's talk, President J. V. Young requested his special committee to give such aid as may be required to afford relief from the provisions of the ordinance referred to by Mr. Eckhardt.

◆

H. W. Salls of Ukiah, Calif., was recently awarded the plumbing contract on the Union high school building at Kelseyville, Calif.

Convention Dates

July 31-August 1, 1930—W. S. P. I.—The tenth annual convention of the Wisconsin Society of Plumbing Inspectors, to be held at the Hotel Witter, Wisconsin Rapids, Wis.

August 12, 13, 14 and 15, 1930—A. S. S. E.—The annual convention of the American Society of Sanitary Engineering, to be held at Winnipeg, Canada.

COMING TRADE EVENTS

July 15, 1930—New England Heating Trades Golf Association. Regular tournament at Belmont Country Club, Belmont, Mass.

July 16, 1930.—Heating and Ventilating Golf Association of Philadelphia, Pa. Regular tournament to be held at the Pine Valley Country Club, Clementon, N. J.

July 16, 1930—The annual picnic of the North and West Side Master Plumbers' Club of Chicago, to be held at Viani's Grove, Park Ridge, Ill.

July 16, 1930—Metropolitan Trade Golf Association. Regular tournament at Pelham Country Club, Pelham, N. Y.

July 17, 1930—The third golf tournament of the Plumbing Contractors' Association of Chicago, to be held at Cog-Hill Golf Club.

July 21, 1930—The fifth golf tournament of the Triangle Club of Pittsburgh, Pa., to be held at Wildwood Country Club.

July 24, 1930—Michigan Trade Golf Association. Regular tournament at Birmingham Golf Club.

August 5, 1930—Western Trade Golf Association. Regular tournament at Olympia Fields Country Club.

August 11, 1930—New England Heating Trades Golf Association. Regular tournament at Winchester Country Club, Winchester, Mass.

August 18, 1930—The sixth golf tournament of the Triangle Club of Pittsburgh, Pa., to be held at Stanton Heights Country Club.

August 21, 1930—Michigan Trade Golf Association vs. Western Trade Golf Association, at Battle Creek, Mich.

August 21, 1930—The fourth golf tournament of the Plumbing Contractors' Association of Chicago, to be held at Big Oaks Golf Club.

August 21, 1930—The annual outing of the Maryland Master Plumbers' Association. Place to be announced later.

August 23, 1930—The annual outing of the Brooklyn Plumbing Supply Credit Association, to be held at Narragansett Inn, Lindenhurst, L. I.

September 5, 1930—Western Trade Golf Association. Regular tournament at Glen Oak Country Club.

September 9, 1930—New England Heating Trades Golf Association. Regular tournament at Andover Country Club, Andover, Mass.

September 15, 1930—The seventh golf tournament of the Triangle Club of Pittsburgh, Pa., to be held at Shannopin Country Club.

September 18, 1930—The fifth golf tournament of the Plumbing Contractors' Association of Chicago, to be held at Oak Hills Golf Club, Palos Park, Ill.

September 18, 1930—Michigan Trade Golf Association. Regular tournament at Meadowbrook Golf and Country Club. "Ladies' Day."

October 2, 1930—Western Trade Golf Association. Final tournament of year at Calumet Country Club.

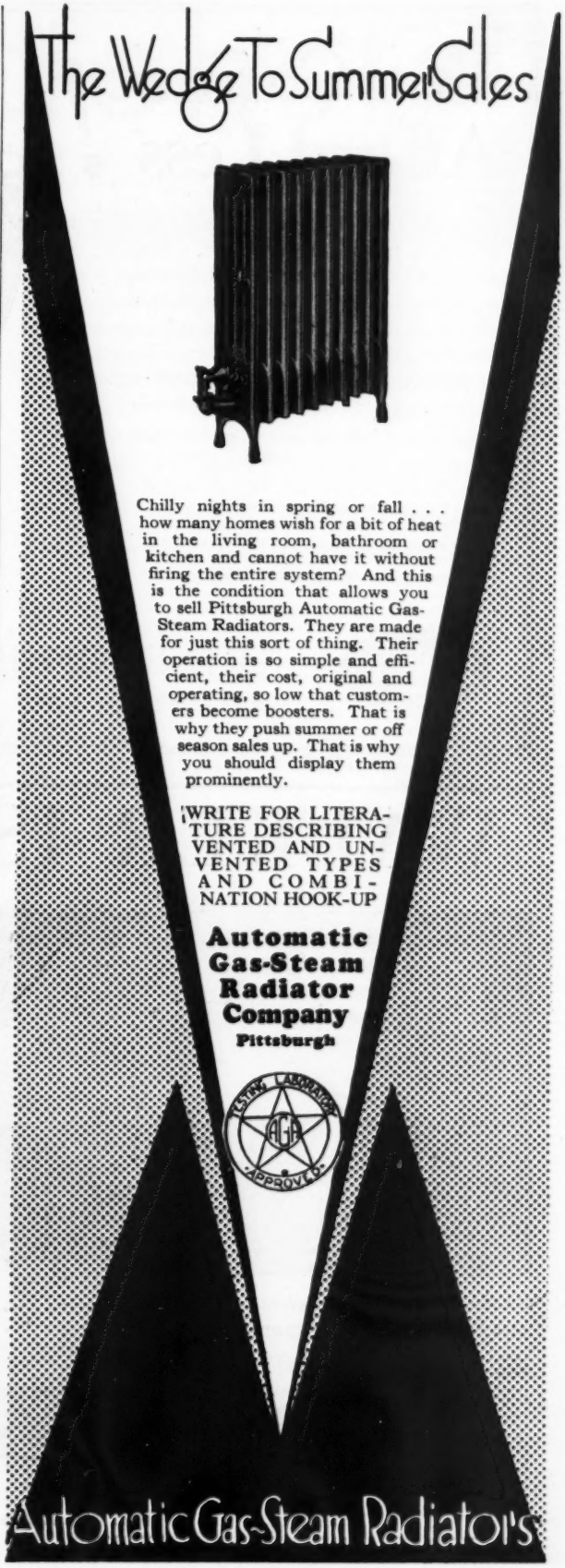
October 7, 1930—New England Heating Trades Golf Association. Regular tournament at Sandy Burr Country Club, Wayland, Mass.

October 9, 1930—The sixth golf tournament of the Plumbing Contractors' Association of Chicago, to be held at Tam O'Shanter Golf Club.

October 14, 1930—The eighth golf tournament of the Triangle Club of Pittsburgh, Pa., to be held at Edgewood Country Club.

November 18, 1930—New England Heating Trades Golf Association. Regular tournament at Unicorn Country Club, Stoneham, Mass.

February 10 to 14, 1931—The fifth Midwestern Engineering and Power Exposition, to be held at the Coliseum, Chicago.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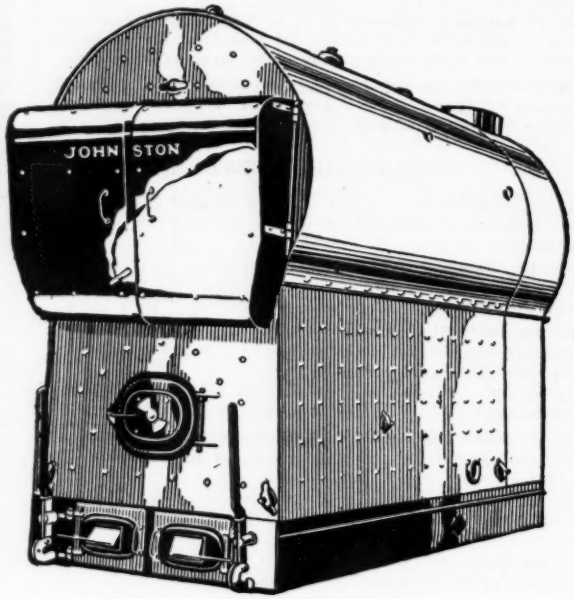

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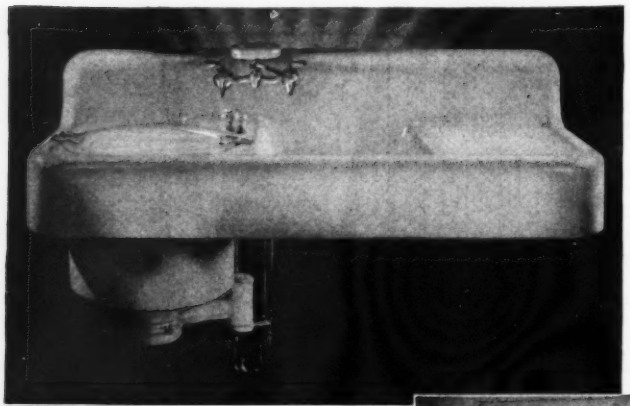

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Questions?

ASKED BY READERS AND ANSWERED BY EXPERTS

Is This Bathroom Vented Correctly?

Editor, DOMESTIC ENGINEERING:—I am sending you a drawing showing a toilet room in which all fixtures are vented. We use very little venting; in fact, I have installed only two such jobs in two years.

Please criticise the work shown by my drawing. I do not believe the lavatories are properly vented. I think that if two of the water closets were flushed at the same time there would be enough vacuum formed in the waste line to siphon out one or more of the lavatories.

By venting the water closets as my drawing shows I think that siphonage would be entirely eliminated.

Massachusetts. B. A.

Fig. 1 shows the layout mentioned by "B. A."

The venting of the two water closets and the slop sink certainly improve the work, for siphonage of those three fixtures is thereby prevented. However, we do not consider that these vents or the loop vent that is formed by extending the horizontal soil branch accomplishes anything for the lavatories.

Fig. 2 shows the layout that we think would produce a properly vented installation.

There is a very general impression, which is not confined to any particular section of the country, that a circuit vent or a loop vent, installed as in Fig. 1, will not only act as a vent for fixtures having floor outlets, such as water closets and slop sinks, but will also effectively vent elevated fixtures, such as sinks, lavatories, lip urinals, etc.

Venting prevents trap siphonage only by bringing a supply of air into the trap at or near the crown of the trap. This is correctly accomplished by the continuous

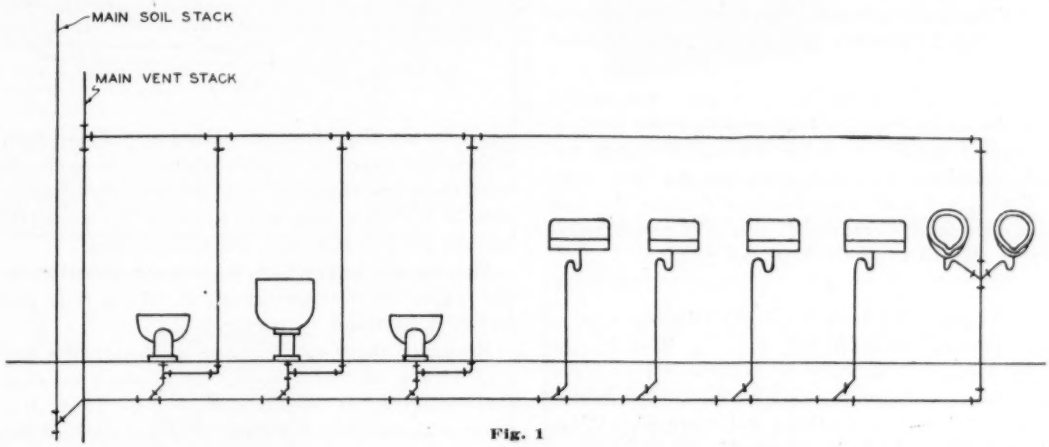


Fig. 1

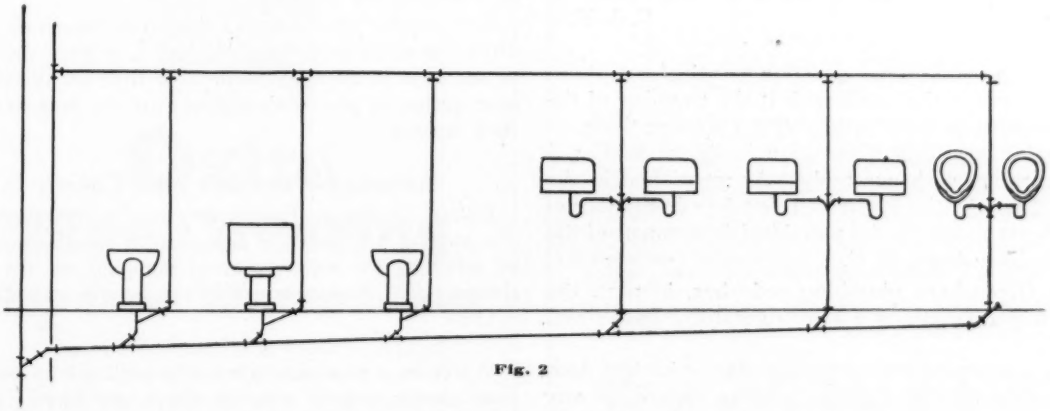


Fig. 2

vent, as in Fig. 2. However, such a connection as the lavatories have in Fig. 1 offers the greatest inducement to siphonage. The vertical waste of one of these lavatories may be considered the outlet or discharge leg of a siphon, while the middle section of the trap, which dips down into the trap seal, may be considered the short leg of the siphon. In any siphon, the longer the discharge leg is in comparison to the leg that dips into the liquid, the stronger will be the action of the siphon. Therefore, in the case of the lavatories in Fig. 1, conditions are just right for the creation of siphonage of the lavatory traps. Their siphonage can be the result of the rush of sewage from other fixtures, or it can result from self-siphonage, that is, the action of the fixture itself.

The two urinals are not subject to siphonage to the same extent as the lavatories, for they are vented. However, ¾ S-traps should never be used in continuous venting, for the vent for such a trap as connected in Fig. 1 cannot deliver air close enough to the crown of the trap to do the work effectively.

A minor point is the connection of the water closet vents to the waste connections. These connections should pitch as in Fig. 2, in order to drain all scale, sediment, etc.

We would not advise the use of a loop vent on this work, as shown in Fig. 1. If this vent were used, of course the individual vents for the water closets and slop sink would be dispensed with, but the vent could not be less than 3-inch, and this would mean the running of a considerable amount of this size, and it would be quite an expensive method, in our opinion.

◆

About Traps for Soda Fountains

Editor, DOMESTIC ENGINEERING:—In Fig. 2, page 51, of the January 25th issue of DOMESTIC ENGINEERING one of the indirect drains for the soda fountain sink is trapped and two others not trapped. When should an indirect drain be trapped?

Ohio. C. A. K.

This is a very proper question to ask, for without the explanation that goes with it the trapping of the indirect drain as mentioned seems a strange thing.

The January 25th illustration is shown as Fig. 1 in connection with our reply. As mentioned in the original article, the illustration is taken from instruction sheets issued by the plumbing department of the city of Greensboro, N. C.

The Greensboro plumbing code has, in part, the following regulations for refrigerators, bar sinks, etc.:

"No waste pipe from a refrigerator or ice box floor drain, cistern, soda fountain or like fixture, or any other receptacle where food is stored shall connect directly with any house drain, soil, or waste pipe. Such waste pipes shall in all cases empty into an open sink that is properly supplied with water and connected, trapped, and vented, or they may discharge into a down spout or rain leader trap located inside the building or into a floor drain, but their ends shall be left open. . . . The waste shall be as short as possible and disconnected from the refrigerator or ice box by at least four inches."

The last paragraph calling for a break of at least 4 inches below the refrigerator waste opening is responsible for the trapping of the refrigerator or ice compartment drain as shown in the illustration. Some soda fountains have their waste connections so close to the floor that it is impossible to gain the

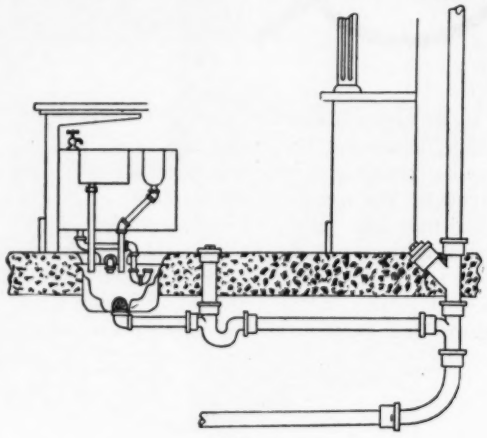


Fig. 1

4-inch break that the code calls for. Under such conditions the practice in Greensboro is to overcome the deficiency by trapping the refrigerator drain. The idea is that the trap will prevent the possibility of impure air passing into the refrigerator.

We do not ordinarily favor such practice as this, but under the circumstances in which it is used we feel it is justified.

Recently there came to our attention the use of a trap at the foot of a refrigerator stack serving several refrigerators on different floors. There the situation was entirely different, and we did not hesitate to condemn the practice.

Refrigerator waste under the most favorable conditions is extremely sluggish, and it is good practice to see to it in every possible way that no additional obstruction is placed in the way of the free flow of such wastes.

◆

Softening Water in a New Cistern

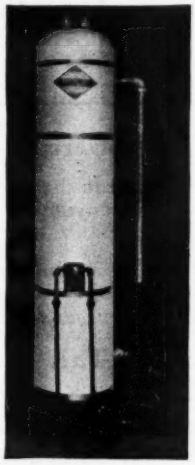
Editor, DOMESTIC ENGINEERING:—Do you know of any method of treating a new cistern for the purpose of softening the water to avoid pumping out the first cistern full? Any information will be appreciated.

Ohio. N. F. C.

Water in a new cistern may be softened by mixing some caustic soda in with the water and stirring it up well.

First, dissolve some caustic soda in a pail of water. Then pour some of the solution into the cistern and mix it well with the entire contents of cistern. Try the water at intervals, and continue adding more caustic soda till the water is soft enough for laundry purposes.

Be careful always not to overdose the cistern with caustic soda.



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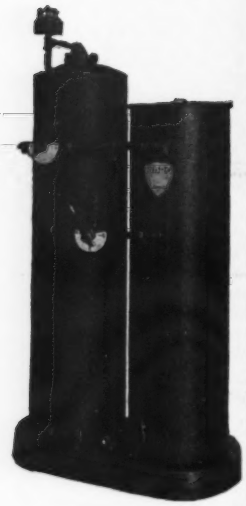

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Questions Answered and Discussed by Readers

How the Question Was Answered

The following question was asked in the issue of June 14, and the accompanying answer is by a reader:

How can the number of gallons of water heated per hour through a given temperature range be transposed in load on the boiler in square feet of steam radiation?

How Would You Answer This Question?

Why is the heating load on a boiler liable to be greater when starting up than after the system is in full operation?

Answers based upon your experience, and suitable, will be paid for and published in the August 9 issue.

1

ALL heat calculations may be reduced to a common factor of B.t.u. and when the quantities are expressed in B.t.u. they are comparable and may be transposed from one form to another.

For instance, let it arbitrarily be assumed that 1,000 gallons of water are to be heated every hour from 50 deg. Fahr. to 150 deg. Fahr. And let it be remembered that a B.t.u. is the amount of heat necessary to raise 1 lb. of water 1 deg. Fahr. and is generally taken as 1/180 of the quantity of heat required to raise the temperature of 1 lb. of water from 32 deg. Fahr. to 212 deg. Fahr.

As there are roughly 8 1/3 lb. of water in every gallon, the total weight of water to be heated will be found to be

$$1000 \times 8\,1/3 \text{ lb.} = 8{,}333 \text{ lb.}$$

Now the number of degrees this water is raised amount to

$$150° - 50° = 100° \text{ F.}$$

and, therefore, the total B.t.u. required will be the number of pounds times the degrees of rise or

$$8{,}333 \times 100° = 833{,}300 \text{ B.t.u.}$$

But, as a square foot of steam radiation is considered as equivalent to 240 B.t.u. per hour, the number of square feet of steam radiation to which this heating of water is equivalent will be

833,300 B.t.u./240 B.t.u. or 3,472 sq. ft.

If a formula for the rating is required, let Q equal the number of gallons of water to be heated in h hours. Then the weight of the water to be heated per hour equals,

$$W = \frac{8.33 \times Q}{h}, \text{ and } R = \frac{W\,(t_2 - t_1)}{240},$$

equals rating expressed in equivalent sq. ft. of steam radiation, if the initial temperature of the water equals t_1, and if the final temperature equals t_2. The number of B.t.u. to be supplied per hour equals $W(t_2 - t_1)$.

Los Angeles, Calif. U. J. Wright.

What Is the Effect of Temperature on Chimney Draft?

(Continued from Page 51)

pendent on the height of the chimney and the average temperature of the gases in the chimney when all other factors are equal. Going farther than this it may be said that when all other factors remain the same and the chimney constitutes a fixed height, the theoretical draft depends on the average temperature of gases in chimney.

Effect of Movement of Gases

No assumption has been made so far in this discussion that the gases have any movement. The conditions quoted only occur if the gases are confined in the chimney and are not permitted to rise; that is one reason that the word "theoretical" is always used to modify the word "draft." Really such a condition cannot occur in an actual chimney unless the top and bottom are closed tight and the hot gases confined therein; but this is not a practical condition for chimney operation and so "theoretical draft" is only a mathematical expression of the total available motive power which may be used to move the chimney gases and to overcome other friction losses between the ash pit and top of the stack.

Let the matter of the gas travel up the stack now be considered. When the top of the chimney is open and hot gases are continuously supplied to the bottom of the chimney, the buoyancy of the gases causes them to rise up through the stack and to flow out of the top. From the time the gases leave the fire box there is a constant drop in temperature until they flow out of the top of the chimney. With what occurs after that, this article is not concerned but the temperature drop between the fire box and the top of the stack has a vital bearing on the matter of draft.

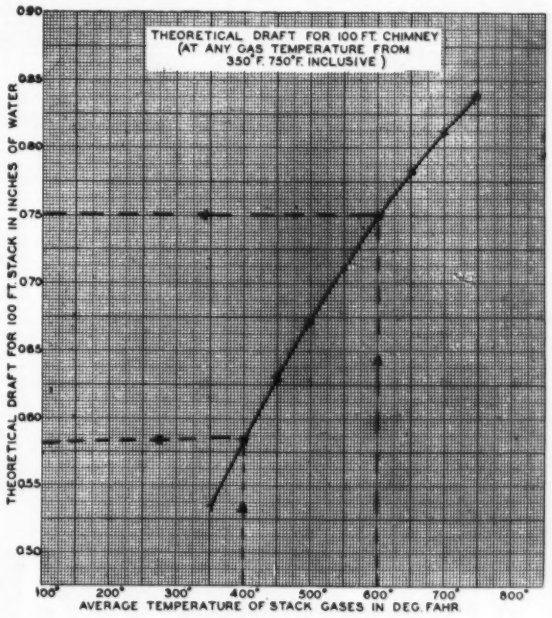
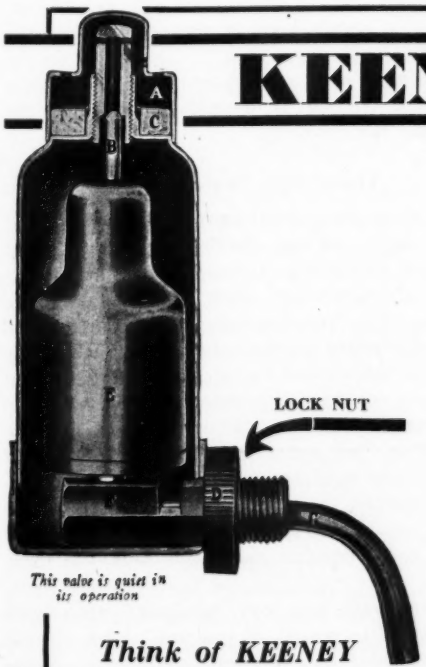


Fig. 5

In the first place the boiler extracts all the heat pos-

KEENEY AIR VALVES



This valve is quiet in its operation

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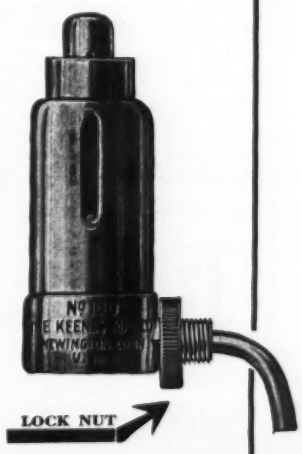
Study carefully the cut-away picture of the Keeney Valve and see at a glance its many advantages.

A. Vent opening inclosed by cap insures clean Valve.
B. Pin has bullet-shaped point to prevent sticking and is made of non-corrosive metal.
C. Asbestos ring or muffler helps to make the Valve more silent.
D. Lock Nut holds Valve in upright position at all times and under all conditions.
E. Thermostatic Float.
F. Threaded shank is hexagonal shaped. Makes a solid base for Float to rest on.
G. Syphon Pipe placed low drains all the water.

Furnished packed in attractive counter and window display cartons



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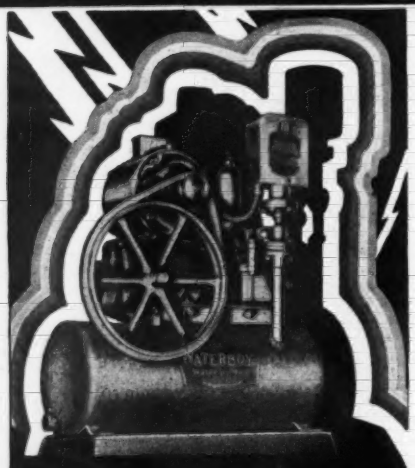
Here is Real Cooperation with Plumbers . . .



THE DL WATERBOY WITH Galvanized TANK

ONLY $78.50 F.O.B. FACTORY

WHAT if plumbers *have* sold and installed DL Waterboys by the thousands? What if we *have* been told that the DL Waterboy is the greatest water system value on the market? These are no reasons why we should let good enough alone . . . why we should not keep on improving our product and help plumbers make *even more* money.

New Galvanized Tank

Now we've made the DL Waterboy better than ever by using a galvanized tank. This tank is galvanized *inside and out.* It lasts three times as long as ordinary tanks. And no rusty water comes from a tank that's galvanized on the inside. Doesn't this make a good "sales talk". . . especially when the price is *only* $78.50 f. o. b. factory?

And not only that, but we're constantly telling your customers about the DL Waterboy through effective National Advertising. We're building up some real business right in your town. *You* might as well reap the profits from this business as anyone else.

Take the First Step

The first thing is to get all the facts about the DL franchise. And that's easy to do—without cost or obligation. Simply write your name on the coupon below and drop it in the mail. We'll rush full particulars about the DL plan and the complete line of DL Water Systems for deep and shallow wells. Mail the coupon now.

DELCO-LIGHT ELECTRIC WATER SYSTEMS
Products of General Motors

DL Electric Water Systems, Delco-Light Electric Plants and Delcogas are sold and warranted by Delco-Light Company, Rochester, N. Y.

"The GOLD STANDARD *of Quality"*

DELCO-LIGHT COMPANY,
Subsidiary of General Motors Corporation,
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Send me all the facts about the DL Waterboy with GALVANIZED tank and other DL Water Systems. And let's have the details about the DL franchise.

Name.....

Address.....

9-130

sible from the gases so that when the gases reach the smoke outlet on the boiler they may be only 400 deg. Fahr. to 500 deg. Fahr.; then there is a certain amount of radiation of heat from the boiler breeching between the boiler and the chimney; and then there is the radiation of heat as the gases pass up the stack. At the top of the chimney they may be only 250 deg. Fahr. to 300 deg. Fahr. The greater these radiation losses are, the less will be the theoretical draft possible to produce when all other conditions are fixed. From this it will be seen that an uncovered breeching of steel will have a greater adverse effect on the draft than a covered one, and a steel chimney will have a more adverse effect than one of brick.

In both instances the difference is caused by the gases being more greatly reduced in temperature on account of their heat passing more readily through an uncovered steel breeching and a steel stack than would occur if the flue were covered and the stack constructed of masonry. Likewise a very efficient boiler which delivers its flue gases at a very low temperature will result in a poorer chimney draft than a boiler which is not so efficient and discharges gases at a higher temperature, because temperature actually is the power behind the throne when all other conditions remain unchanged.

When gases are moving through the fire, boiler, breeching and up the chimney a certain amount of friction takes place and this is termed draft loss. For instance if the draft gauge shows ½ in. of draft above the fire and nothing in the ash pit under the fire, the draft loss for the fire is ½ in. of water. Similarly if the draft gauge shows ⅞ in. draft in the smoke outlet of the boiler, the draft loss for the boiler will be ⅞ in. — ½ in. = ⅜ in. and if it shows 1 in. at the point where the breeching enters the chimney then the draft loss in the breeching is 1 in. — ⅞ in., or ⅛ in. There is also a certain amount of friction, or draft loss, caused by the gases flowing up the chimney.

Theoretical Draft

The sum of all of these draft losses will always equal the theoretical draft, because the losses cannot exceed the motive power available to overcome them and it has been seen that the theoretical draft is the total motive power available. On the other hand, since friction and draft loss are dependent on the velocity with which the gases flow across the various surfaces, all the theoretical draft does is to increase this velocity from zero up to a point where the sum of all the draft losses at some particular velocity just equal the theoretical draft, at which time a state of equilibrium is established and maintained until disturbed by some other factor, when the velocity again establishes itself at some new rate of flow so as to again equalize the losses with the theoretical draft.

Now the fire draft loss may be varied, the boiler draft loss may be increased or reduced, some of the bends in the breeching may be eliminated or the velocity of the gases passing up the chimney may be altered, but one thing will remain unchanged. The sum of all the draft losses will equal the theoretical draft!

In a later article some of the other factors entering into chimney performance will be taken up and discussed, but regardless of how the other factors may be

shifted around it is positive that the motive power for a given height of chimney can always be accurately determined by the average *temperature* of the gases in the chimney.

Color!

(Continued from Page 49)

The fixtures, consisting of bathtub, lavatory and closet outfit, were of yellow. The tile work on the floor and base for the lower portion of the walls was of a sea-green shaded tile, and the upper portions of the walls were treated with a varnished paper, the background of which was sea-green with somewhat of a marine scene, consisting of conventional fish and sea fernery in shades of pale blue, pink, orchid and yellow that matched the fixtures as closely as ever it would be possible to obtain colors in various products. The ceiling was tinted a very delicate shade to blend with the walls. One could scarcely believe or imagine the unusual effect.

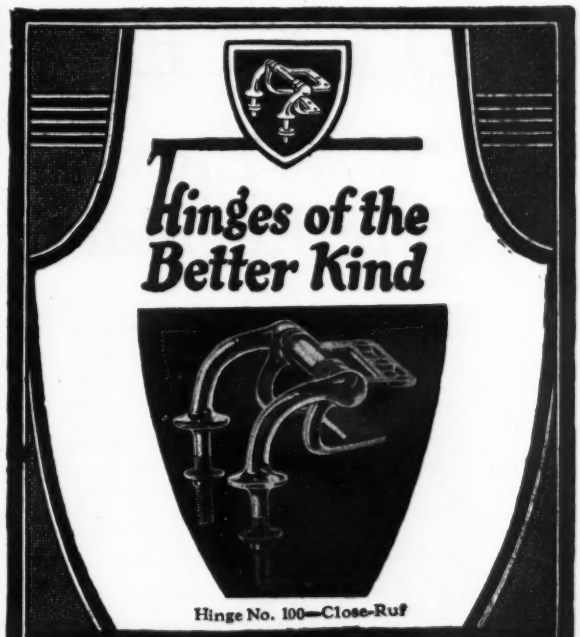
Still another arrangement which might at first sound rather daring, but worked out rather charmingly, since it expressed the owner's personal taste, resulted as follows:—

The walls were painted a shade bordering on fern green with touches of tomato-red in small conventional designs. The floor was of tile, in tomato-red interspersed with fern green. The bathtub, closet outfit and lavatory were of ivory tint. The window drapes were of figured chintz, the pattern carrying out the color of wall and floor with touches of black, and the ruffles on the drapes of tomato-red.

Frequently you will find a customer who has a small wash room or lavatory situated in some corner of the first floor as a matter of convenience for the family or visitors. Color arrangements, as illustrated above, will add considerably to the appearance of these little rooms.

Just to show how color does affect the plumbing industry today: A gentleman recently leased a suite of offices in a professional building which he furnished on an elaborate scale in order to remove that professional atmosphere, and make a patient's visit one of cheer and pleasure. He decided that his lavatories and washrooms must share this atmosphere. Never having occasion to consider these rooms before, he was rather puzzled and took his problem to his plumber. This, too, proved a new problem for the plumber. He realized that it would never do to use quantities of color. The situation required something more subdûed, and at the same time the gentleman insisted that he desired to get away from all white. While quite the most sanitary in appearance, he preferred to have his patients feel less like entering a hospital. A little thought and planning soon solved the problem, and the following results were achieved.

The walls and floors of the wash rooms, or lavatories, were tiled in ivory, the floor, of course, being arranged in black and ivory. The severity of the walls was broken by employing a narrow black line of tile. The lavatories and closet outfits were of



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Hinges for all types of toilet seats
All hinges can be furnished Crodon Plated if so desired.

There's profit a plenty for you in WEISTEEL Integral Shower installations if you will take the time to see that hundreds of golfers in your community have showers installed in their homes. These men and women know what pep a shower imparts to them after a strenuous game of golf. Go after these prospects and sell them WEISTEEL, the one-piece shower cabinet that sets on any floor, against any kind of walls, and cannot possibly leak. Let us tell you about the WEISTEEL plan. Write today . . . THE HENRY WEIS MFG. CO., INC., Elkhart, Indiana.

WEISTEEL
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WATER
Pressure Regulator

HERE is the safe, sure way to safeguard your customers' plumbing systems. The d'Este Water Pressure Regulator positively prevents water hammer. It furnishes the desired steady stream of water at all times and is trouble-free and fool-proof.

Equipped with renewable valve and seat—has full size seat area and bronze body with bronze mountings.

Write for Catalog No. 61-B of Curtis Engineering Specialties.

Trade Mark

Badge of Quality

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(Charlestown District)

ivory, as well as the balance of the furnishings, relieved here and there by touches of black. The accessories, such as towel bars, tumbler holders and soap dishes, and the frames on the mirrors, were black. The additional touches of color were to be found in linens, drapes and rugs, and these could be changed from time to time without great expense.

This particular installation bears out more than many others the manner in which color has entered into and the effect produced in the plumbing industry today. No matter how large or small the room may be, whether in the home, public or semi-public places, offices, etc., whether the purse be limited or the expense considered a minor matter, to be up-to-date, to make it modern, the choice of color is most essential. These rather heretofore unimportant rooms and their details, which have so long remained in obscurity, have at last come into their own. Formerly that which was a necessity is now a matter of pride, assuming its rank with the rest of the beauties of an interior.

The foregoing are just a very few of the results and effects which may be accomplished. Plumbers have a vast field before them in the way of additional bathrooms, even in the remodeling of present ones, giving ample field for work to those who are willing to show their interest and lend their assistance.

To your next customer suggest this touch of color, show and tell him of the advantages. He may never really have given the matter thought. Make him acquainted with the fact that you are in a position to render him satisfactory service and useful suggestions in this regard.

◆

Milwaukee Association Incorporates

Announcement has been made of the incorporation of the Milwaukee, Wis., Master Plumbers' Association, following a meeting of officers and the board of directors at the Milwaukee Builders' Exchange on June 17. The association has been incorporated as a non-stock corporation, in operation to conduct a trade organization which will promote better plumbing and heating, and educate its members to better business methods.

All officers and directors of the Milwaukee Master Plumbers' Association, Inc., have been re-elected. Officers are: President, W. W. Dusold; vice president, H. C. Weber; secretary, A. F. Boettcher; treasurer, Peter Vogt; and sergeant-at-arms, H. A. Wegner. Directors include the officers and Charles Pelunek, Joseph Wittig, E. Knauer, Jacob Shuh, Paul Buckethal, Hugo Lippert, David Stern, Joseph Brah, H. H. Borkenhagen, Albert H. Hoffmann and Walter Tesch.

◆

Oregon Building Congress in New Quarters

The Oregon Building Congress, Portland, Ore., which is the sponsor for vocational apprenticeship schools in that city, is moving from its former location in the Oregon building to the offices of the executive secretary, Charles D. James, in the Couch building.

◆

W. R. Rannie of Grants Pass, Ore., has the plumbing and heating contract, amounting to approximately $4,800, on the Josephine County jail, in that city.

Opposition Within the Plumbing Trade to Improvement of Plumbing

(Continued from Page 103)

on this hotel installation could be required to be vented. That condition seems almost impossible no doubt, to many a reader who is working under correct modern plumbing ordinances, but it is the truth of the situation as it exists in many of our cities and towns today.

The plumbing inspector states that this ruling has not been applied to small buildings as yet, as there are good prospects of the abandonment of the non-siphon trap in the near future.

The Correct Layout According to Modern Practices

Fig. 4 shows how the modern layout would look, and it is clear that even in comparison to the improved in-

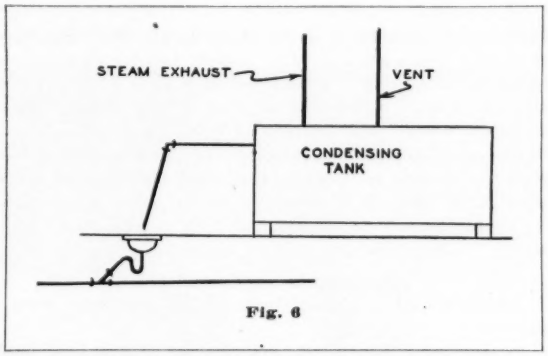


Fig. 6

stallation of Fig. 3, it leaves much to be desired in the latter.

Referring to Fig. 3, it will be noted that the stack is 4-inch, and the same size is used on the horizontal into which the stack connects. This size is O. K. for the stack, but in our opinion the horizontal line is too small.

The horizontal is not a main line, but an offset, varying with different stacks, from 15 ft. to 40 ft., to carry the lines over the hotel lobby and into columns which conceal the pipe. In our opinion, nothing less than 5-inch should be used on these horizontals, and unless there is a good pitch on them, 6-inch should be used.

Figs. 5 and 6 show other features of the plumbing practice of the city whose methods we are discussing.

Fig. 5 comes under the following ordinance: "Where a fixture is put in and discharges by means of a waste pipe into an open drain, a trap but no vent will be necessary, but the waste pipe must not exceed 15 ft. in length unless approved by the inspector."

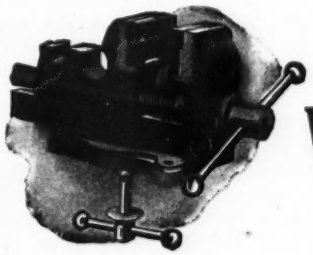
The condensing tank connections are all right except in the most important feature of all, the discharge from the tank to the drain. The outlet should dip down, so that it will take the water from the part of the tank where it is coldest. As now connected, the tank defeats its real purpose, for the hottest water is at the top, and that is where the present outlet takes it from.

In conclusion we want again to express the hope that this fine city we have been talking about will soon be installing as good plumbing as its plumbing inspector could wish to see installed.

Stock up now With Hindley Specialties

The way Hindley Specialties are packed makes them not only easy to handle but you will find that they require less space. Put in your stock now and have them ready for instant use.

Hindley Mfg. Co.
Valley Falls R. I.



Vanderman

If you haven't a copy of the Vanderman catalog which gives complete illustrations, specifications and prices on Vanderman Combination Pipe Vises and on Vanderman Steel Tool Chests, write for one today.

The Vanderman Mfg. Co.
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Vanderman Steel Tool Chests are made in any size you require.

Woman's Page

by Dorothy Edwards

Mrs. W. E. McAndrew

Women's Auxiliary Holds Twelfth Annual Convention

FROM practically all sections of the country came women affiliated, through the Women's Auxiliary, with the National Association of Master Plumbers, to meet in their twelfth annual convention on June 23, 24 and 26 at the Hotel Statler, Boston, Mass., to again discuss ways and means for furthering co-operation with the organization to which they are allied. Opening the meeting Tuesday afternoon, Mrs. C. D. Kieser of the Massachusetts division introduced those officers of the national, state and local auxiliaries present. This ceremony was followed with the call to order by National President Mrs. W. E. McAndrew of Tampa, Fla., the singing of America, and prayer led by National Chaplain Mrs. D. J. Ahearn of Canton, Ohio.

Mrs. McAndrew Re-elected President

The election of officers resulted in the re-election of Mrs. McAndrew to the presidency, and Mrs. George W. Frank of Buffalo, N. Y.; Mrs. William Kuehne of St. Louis, Mo., and Mrs. J. Preston Perham of West Roxbury, Mass., to the first, second and third vice presidencies, respectively. Mrs. R. B. Roos of St. Louis, Mo., was made recording secretary and Mrs. Robert Liss of Chicago was re-elected treasurer. Mrs. Rose R. Friend of Milwaukee, who is in her eighty-second year and is still active in auxiliary affairs, was chosen as historian. Mrs. John J. Corcoran of Jersey City, president of the New Jersey State Auxiliary, acted as chairman of the election committee, with Mrs. Wallace T. Wordell of Taunton, Mass.; Mrs. I. E. Henderson of Kansas City, Mo., and Mrs. W. J. Henry of New Canaan, Conn., assisting.

The Convention Committees

Appointments to committees by the president were as follows:

Credentials: Mrs. L. R. Schmaus of Milwaukee, chairman; Mrs. H. H. Diedesch of Chicago, and Mrs. A. A. Mills of New Britain, Conn.

Amendments: Mrs. John J. Corcoran of Jersey City, chairman; Mrs. John Feiner of Racine, Wis., and Mrs. H. O. Green of Tulsa, Okla.

Auditing: Mrs. O. A. Waskow of Milwaukee, chairman; Mrs. Margaret Mesnard of Detroit, Mich., and Mrs. Harry L. Stilwell of Philadelphia.

Memorial: Mrs. D. J. Ahearn of Canton, Ohio, chairman;

The Colonial tea given by the Massachusetts state auxiliary during the convention of the Women's Auxiliary to the National Association of Master Plumbers

Mrs. William Hughes of Detroit, and Mrs. A. C. Hughes of Norwalk, Conn.

Resolutions: Mrs. George Hicks of Philadelphia, chairman; Mrs. E. B. Clayton of Denver, Colo., and Mrs. E. J. Durr of Hewlett, L. I.

Courtesy: Mrs. L. O. Klopfer of Minneapolis, chairman; Mrs. J. F. Murphy of New Bedford, Mass., and Mrs. Frank Wall of Washington, D. C.

During the first session letters and telegrams of regrets and good wishes from a number of the members who were unavoidably absent were read. Among these was one from Mrs. E. D. Hornbrook of Kansas City, Mo., the mother of the auxiliary and its former president, a reply to which was sent and flowers were delivered to her by telegraph. Later a basket of flowers and several other gifts were presented to the president from the Buffalo, Boston and Massachusetts State Auxiliaries. In the absence of Mrs. W. T. A. Marx of St. Louis, historian, Mrs. R. B. Roos of that city reviewed the history of the auxiliary.

The Scholarship Fund

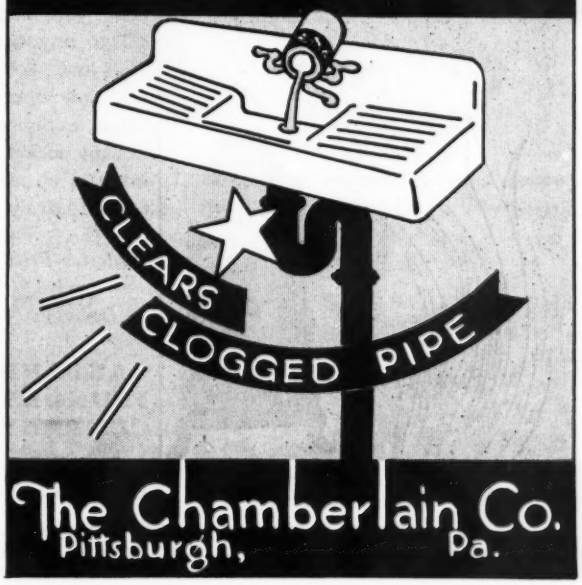
The first of the reports read was that of Mrs. Charles Werner of Jersey City, chairman of the scholarship committee, who with an expression of regret at the absence

Top row: Mrs. J. Preston Perham of West Roxbury, third vice president, national auxiliary; Mrs. Charles Werner, Jersey City, chairman of the national auxiliary scholarship committee; Mrs. Foster R. Fanning of Winter Park, Fla., national recording secretary; Mrs. Fred W. Quinter, Washington, D. C. Bottom row: Mrs. H. L. Rose, president of the Boston auxiliary, with the flowers presented to her by the national auxiliary; Mrs. Robert Liss of Chicago, treasurer of the national association

of Mrs. Hornbrook, the first to interest the women in auxiliary work, called attention to the fact that a hand-made quilt which she had sent, the proceeds of which at a sale were to go to the past presidents' scholarship fund, was indicative of undiminished interest in the work. This the report further explained is a single boy scholarship, which was established by vote at the last convention. Continuing it said, "While there is on hand $1,387, a little less than half of the required amount, our efforts in the past for the scholarship fund of the National Association of Master Plumbers have not been in vain, as two of the boys are graduating this year. This one boy scholarship, instigated at Buffalo, is intended to commemorate the work of past presidents of the Master Plumbers' Association." Mrs. Werner thanked the committee for their aid during the year.

Mrs. Diedesch at the conclusion of the report presented Mrs. McAndrew for the scholarship fund, as coming from the Illinois State Auxiliary, a check in the amount of $1,900, representing the balance of a $2,000 pledge made

Desolvo



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"Just Twenty Steps From Fountain Square"

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Room with running water, $2.00.
Single with bath, $2.50 to $5.00
Double with bath, $4.00 to $7.00

Special Group Rates

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four years ago, at which time the sum was sufficient to defray the expenses of a single scholarship, on which $100 had already been turned over, each of the Illinois local auxiliaries having contributed $125 annually. The check was later presented to George H. Drake of Buffalo, president of the National Association of Master Plumbers.

Standing Committees Report

With the acceptance of the report of Mrs. Robert Liss, treasurer, who indicated that the organization is in a healthy financial condition, Mrs. Fanning of Winter Park, Fla., presented her report as recording secretary.

Mrs. Frank Williams of Tampa, Fla., reported as corresponding secretary. Mrs. Frank and Mrs. Perham offered reports as first and third vice president, respectively. Mrs. McAndrew made a very complete report of the accomplishments during the past year and this, along with the other official reports and the convention business will appear in a later issue of DOMESTIC ENGINEERING.

Entertainment Features

The convention preparations made by the Boston and Massachusetts hostesses provided for complete and interesting recreation during the hours the delegates and guests were not engaged with the sessions. The first of these affairs, a brilliant afternoon tea, served in the ballroom of the Hotel Statler, was attended by more than four hundred ladies. Arrangements for this affair, besides a musical program, included the appearance of a large number of the Massachusetts state auxiliary members in Colonial costumes commemorating the three hundredth anniversary of the settlement of Boston which is being celebrated this year. A reception and dance followed in the evening. On Tuesday evening a vaudeville entertainment in the ballroom entertained the ladies, who were the guests of the Massachusetts Sanitary Club.

A tour of the historical points of Boston occupied the visiting ladies during Wednesday morning, which ended with a luncheon served at the Hotel Statler. In the evening a trip was made to Revere Beach by bus. Another feature of the convention came Thursday evening in the President's Ball, at which every one appeared. Friday, a motor bus trip to Lexington and Concord over the route taken by Paul Revere with stops at all points of interest concluded the entertainment.

New Auxiliaries Organized in Wisconsin

Two, new auxiliaries have recently been organized in Wisconsin through the efforts of Mrs. J. Feiner, state

Top row: Mrs. John Feiner of Racine, president of the Wisconsin state auxiliary; Mrs. Geo. Stoehr, of Milwaukee; Mrs. A. A. Mills, secretary, Connecticut state auxiliary; Mrs. C. A. Hjerpe, New Britain, Conn. Bottom row: Mrs. Iver Iverson of Portland and Mrs. George F. Scribner, Portland, Me.

president; Mrs. J. Brah, state vice president, and Mrs. A. Brunk, state secretary. The Sheboygan auxiliary was formed at a meeting held on June 12, at the home of Mrs. James Vowinkel. Mrs. Feiner, Mrs. Brah and Mrs. Brunk were guests for the evening. The following officers were chosen: Mrs. A. Zurheide, 2329 North Fifth street, president; Mrs. James Vowinkel, 915 Indiana avenue, vice president; Mrs. P. H. Schneider, 1621 North Third street, secretary; Mrs. H. Huebner, treasurer.

The Manitowoc-Two Rivers auxiliary was organized at a meeting held at the Hotel Manitowoc. Mrs. Feiner and Mrs. Brunk attended this meeting. Mrs. E. Braunel was chosen president; Mrs. Leahy, vice president; Mrs. Otto Wihsman, secretary; Mrs. Charles Hardow, treasurer.

During the past two months the state officers have visited Janesville, Beloit, Appleton, Oshkosh, Fond du Lac and Kenosha, besides Sheboygan and Manitowoc. The Kenosha ladies will unite with the Racine auxiliary.

Past Presidents' Scholarship Fund Increased

The following communication has been received from Mrs. C. D. Kieser, past president of the Women's Auxiliary of the Massachusetts State Association of Master Plumbers:

"I want to thank all the girls, from all the States, who assisted me with the beautiful quilt made by our beloved past national president of the Women's Auxiliary of the National Association of Master Plumbers, Mrs. E. D. Hornbrook, for the past presidents' scholarship fund of the National Association of Master Plumbers. The sum added to the scholarship fund was $192."

Auxiliary Formed at Shreveport, La.

A women's auxiliary was recently formed at Shreveport, La. Mrs. J. C. Jorden, 2701 Samford avenue, was chosen president of this auxiliary, which assisted in the entertainment of guests at the convention of the Louisiana-Mississippi Master Plumbers' Association. Mrs. Mary L. Deck, 2610 Portland avenue, is secretary.

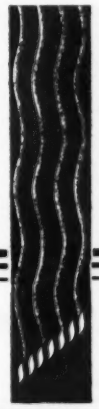
Detroit Auxiliary Gives Picnic at Belle Isle

The Women's Auxiliary to the Detroit Master Plumbers' Association held a picnic at Belle Isle on Saturday, June 14, for members and families. About fifty took advantage of the ideal picnic weather, and attended the outing. Mrs. Hazel Nawrot, president of the auxiliary, and Mrs. Laura Schonhofen, chairman of the entertainment committee, had arranged a very interesting program of games, and had many prizes for children, as well as mamas and daddies, which gave much fun and pleasure. Mrs. Minerva Snyder took charge of the commissariat department, and when suppertime came, with the help of the lunch baskets brought along, there was a fine supper.

Another interesting affair was a bridge luncheon given recently by Mrs. Flanigan at her home. The day was very warm, but the house was delightfully cool, and there was a big outside porch with awnings and comfortable chairs. A delicious luncheon was served, and cards were played afterward. Altogether it was a most enjoyable affair for everyone. A business meeting held on June 3 closed the season of regular meetings until September.

Trenton Auxiliary Gives Dinner

The Women's Auxiliary to the Master Plumbers' Association of Trenton, N. J., gave a dinner at the Cadwallader Park Mansion House on June 4. Mrs. Harry Greiner was the hostess, and the auxiliary had as its invited guest, Mrs. Strack of Camden, N. J. This meeting brought the season to a close, and plans were made for the coming year. Those present were: Mrs. Thomas Kerwick, Mrs. J. Miller Heideweiler, Mrs. John Mickels, Mrs. Fred Nitz,



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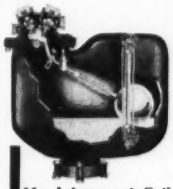
The Heart of the MARSH Vapor Heating Systems—

the Ideal system for heating homes and small buildings with the greatest economy and efficiency.



Marsh Automatic Boiler Return Trap

The Marsh Automatic Boiler Return Trap insures the return of water of condensation into the boiler regardless of the pressure within it. This distinctive feature gives maximum efficiency and economy to the Marsh Vapor System of Heating.

JAS. P. MARSH & CO.
(Division of Commercial Instrument Corporation)
Home Office: 2079 Southport Ave.
Other offices in principal cities

Marsh System Units

EXPAN-HUB SOIL PIPE

A specially designed gasket is inserted in the hub of each length of Expan-Hub Soil Pipe. When the stack is erected the lengths are separated by this gasket, instead of being set unyielding metal against metal. This absorbs all the movements due to expansion and the settlement of buildings—*keeping the stack-joints gas-tight.*

Manufactured and sold by

ALABAMA PIPE COMPANY STRINGER BROS. CO., Inc.
ANNISTON FOUNDRY CO. THE WETTER PIPE CO.
INTERSTATE FOUNDRY COMPANY

PIPE-INSTALLATIONS LARGE AND SMALL LEAK FREE

are being made with Airco-Davis-Bournonville Welding and Cutting Outfits, easily taken to any point on the job.

AIR REDUCTION SALES COMPANY

Manufacturers and distributors of Airco Oxygen, Airco Acetylene, Airco-National Carbide
Airco - Davis - Bournonville Welding and Cutting Apparatus and Welding Supplies

Baltimore, Bettendorf, Ia., Birmingham, Boston, Buffalo, Charlotte, N. C., Chicago, Cleveland, Dayton, Detroit, Emeryville, Calif., Jersey City, Los Angeles, Louisville, Ky., Milwaukee, Minneapolis, Oklahoma City, Philadelphia, Pittsburgh, Richmond, Seattle, St. Louis, Wheeling

AIRCO DAVIS BOURNONVILLE

Home Office: Lincoln Bldg., E. 42nd St., New York City, N. Y.
88 Plants - 115 Warehouses

In 1910—

The name "American" was new in plumbers' brass goods but even then, its first users recognized its high quality, its precision design and excellent workmanship. Those first users still specify and install "American"—the name of the built-for-the-future line of brass. Your jobber has American.

Fig. 588

American Sanitary Mfg. Co.

ABINGDON ILLINOIS

NATIONAL Control

of dampers, centered in METAPHRAM DAMPER REGULATORS provides constant, gradual movement of draft and check dampers to compensate for changing heat demands.

There is a METAPHRAM DAMPER REGULATOR for every domestic heating boiler.

Write for descriptive literature covering your control requirements

National Regulator Co., 2317 Knox Ave., Chicago, Ill.

Order It Now

Let your jobber send this attractive **DUR-A-BAL*** counter salesman.

It will sell many pure gum rubber **DUR-A-BALS*** for you and make many new customers.

*REG. U. S. PAT. OFF.

Lavelle Rubber Co., 320 W. Illinois St., Chicago, Ill.

Now! only $75

Cash, F.O.B. Factory For 210-gallon-per-hour size Complete with motor for 60-cycle or direct current

Profit by this outstanding value in Home Water Systems

AT $75, this New Type complete 210-gallon-per-hour Fairbanks-Morse Home Water System is unmistakably the greatest value ever offered.

It is automatic with all working parts enclosed in a handsome lacquered casing. This tremendous value, made possible by Fairbanks-Morse quantity production and world-wide distribution, will mean extra profits for the dealers that handle them.

Write now for complete information before someone else in your territory gets the franchise. Address Dept. I-7.

FAIRBANKS, MORSE & CO., 900 S. Wabash Ave., Chicago

FAIRBANKS-MORSE Home Water Systems

Mrs. MacQueen, Mrs. Frank Dunn, Mrs. Yara Yago, Mrs. John Mackey, Mrs. George Hughes, Mrs. Joseph Reeves, Mrs. William G. Royer, Sr.; Mrs. William Lee, Mrs. Bruno, Mrs. Walters, Mrs. Harry Greiner and Mrs. Strack of Camden, N. J.

Milwaukee Auxiliary Plans Outing

On Monday, June 2, the ladies' auxiliary held its regular business meeting at the Randolph Hotel. The following delegates were elected to attend the national convention: Mmes. O. Waskow, W. Dusold, L. Schmaus, J. Schuh, J. Brah, and E. Friend. The organization will hold no more meetings now until fall, when a regular business session will take place September 7. A basket picnic is scheduled for August 21, at the summer home of Mrs. Waskow on Pewaukee Lake.

South Side Auxiliary Holds June Meeting

Twenty-eight ladies attended the regular June meeting of the South Side Woman's Auxiliary held at the Fairfax Hotel in Chicago, Wednesday, June 4. Mesdames Wilson, Tresch, McHugh, Lowe and Harris were hostesses for the afternoon. At the business meeting, which followed a very delicious luncheon, the members discussed the possibility of holding a picnic for the members, their families and friends during the latter part of June. A large attendance was expected, as everyone at the meeting was very enthusiastic over the plans for this gathering. Mrs. Quinlan, chairman of the entertainment committee, offered the use of her summer home at Miller's Beach, at the Dunes. This is an ideal spot for a picnic and everyone appreciated her thoughtfulness. Following this business session, the usual games of cards were enjoyed.

Schenectady Auxiliary Gives Picnic Supper

Instead of having their recent meeting in the club rooms, the Schenectady, New York, Woman's Auxiliary held it at Central Park following a picnic supper. The weather was so warm that last minute plans were made to invite the husbands and children. Everyone enjoyed the "spread" of salads, baked beans, pickles, "dogs," rolls, cake, fruit and coffee. It was decided that no more meetings would be held until September. Plans were completed for an afternoon card party to be held at the home of Mrs. C. Roony.

Germantown Auxiliary Holds Meeting

The Women's Auxiliary of Germantown, Pa., held its last meeting for the season at the home of Mrs. D. Steven, 4932 Germantown avenue. After the meeting was over, the ladies and their husbands all joined in playing games. Refreshments were served by the social committee. No outings are planned for the summer, as all the members will be out of town. Members departed to their homes, anticipating pleasant summer vacations, and a reunion in the fall.

Large Delegation from New Jersey Attends National Convention

A large delegation from the New Jersey Women's Auxiliary attended the national convention in Boston. Among the state officers attending were Mrs. J. J. Corcoran of Jersey City, president; Mrs. J. Miller Heideweiler of Trenton, vice president; Mrs. Louis Komoski of Jersey City, secretary; Mrs. Henry Williamson of Montclair, treasurer; Mrs. Fred Hoffman, president of Orange auxiliary; Mrs. Sharrock of Jersey City; Mrs. Charles Werner of Jersey City, chairman of the national scholarship committee; Mrs MacQueen of Trenton, Mrs. Triani; Mrs. Thurnau of North Hudson; Mrs. Byrd of Elizabeth; Mrs. Burns of Rahway and Mrs. Ingraham of Jersey City.

Pipelines Connected by L Y T

ON PACKING A VACATION TRUNK

Packing a trunk for a vacation trip is like trying to drink Canada Dry straight. You never know what a hopeless task it is until you try it.

A certain amount of baggage is allowed free on your transportation. Mention the weight to your wife. It will interest her about as much as what Solomon said to his thirty-seventh wife as he was leaving on his honeymoon with his thirty-eighth.

Since your golf shoes always get left out anyhow, plan now to carry them in your hand.

NURSERY RHYME FOR BAGGAGE MEN

Bang the trunk! Bang the trunk
Baggage man,
Bang it as hard as
Ever you can;
Roll it, and thump it and bump
It with glee;
And dance with your helper on it
Fiendishly.

CHORUS:

Ring around the baggage,
Treat it very savage,
When the trunk comes home to rest,
It will no longer look its best.

"SY" SEZ

Teacher: "Mary, why doesn't your lamb follow you to school nowadays?"
Mary: "What? At fifty miles an hour?"

"How old are you my little man?"
"I don't know. Mother was twenty-six when I was born, but now she's only twenty-four."

"So you want to marry my daughter, eh?"
"Yes, sir."
"Do you know much about business?"
"Not much, sir."
"Know the difference between an asset and a liability?"
"No, sir."
"Well, you will, after you marry my daughter."
"SY" MARTIN, Owensboro, Ky.

WOULDN'T WE ALL?

Customer: "I'd like to see some good second-hand cars."
Salesman: "So would I."

A patrol wagon, says a witty columnist, isn't much of a car, but it'll do in a pinch.

Two little boys who had been naughty were told by their teacher that they must stay after school and write their names 500 times. One of them began to watch the other unhappily.

"Why don't you write, Tommy?" asked the teacher.

Tommy burst into tears. "'Tisn't fair!" he said between sobs. "His name's Lee and mine's Schluttermeyer!"—Leighton Gloom Chaser.

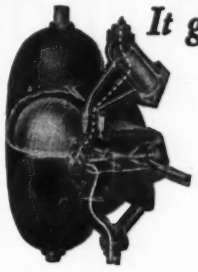
THE LIVES OF GREAT MEN ALL REMIND US

Two druggists were talking about a fellow druggist who had just died.

"He was a great druggist," said one of them.

"He was," admitted the other. "But don't you think he made his chicken salad sandwiches a little too salty?"

A great many men who are brilliant at making money are very dull about spending it. L Y T.

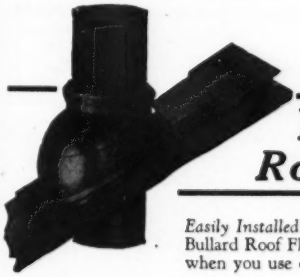


It guarantees every job—

That is the record of the new M & M Self-Cleaning Duplex Feeder on every installation to date. Its certainty of operation gives positive boiler protection against burn-outs or cracked sections—and leaves a clear profit, free from service calls or comebacks. Full details in the new 8-page booklet—write for your copy.

McDONNELL & MILLER
400 N. Michigan Ave., Chicago
Eastern Office: Grand Central Terminal, New York, N. Y.

McDONNELL & MILLER
Self-cleaning Duplex Feeder



BULLARD
Roof Flashings

Easily Installed. This is the second feature of Bullard Roof Flashings which you will discover when you use one.

They go on the roof quickly and with the other points that distinguish Bullard Flashings, they'll do a real job of satisfying both you and your customer.

Ask your jobber or write us for information on the other Bullard features.

The Bullard Specialty Co.
Tiffin Ohio

Air-Tight Steel Tank Co.
PITTSBURGH, PA.

TANKS

TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. ATSCO Genuine Copper Brazed tanks for high pressure—the tightest, safest, strongest tank it is possible to construct by any known process. A.S.M.E. code tanks.

Stop pipe thread leaks with SMOOTH-ON No. 1 in a SMOOTH-ON CLAMP

Sizes for 1-in. to 12-in. pipe.

QUICK, easy, cheap. Holds for the life of the line—any pressure, any temperature, iron, brass, or copper pipe. Get Smooth-On Clamps and Smooth-On No. 1 from nearest supply house or from us.

Write for the free Smooth-On Handbook.

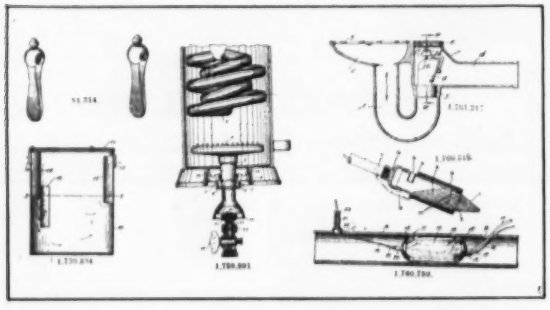
SMOOTH-ON MFG. CO.
Dept. 12, 574 Communipaw Ave., Jersey City, N. J.

SMOOTH-ON

Plumbing and Heating Patents

Plumbing Department

1,759,334. Septic Tank. Frederick E. Wilson, Buffalo, N. Y.



1,760,750. Stopper for Gas and Water Mains. Patrick Goodman, Brooklyn, N. Y.

1,760,519. Soldering Iron. Robert Palmer, Niskayuna, N. Y., assignor to General Electric Company.

81,314. Faucet Handle. Samuel Kersten, Chicago, Ill.

1,759,891. Valve. Loran F. Doen, Cleveland, Ohio, assignor to The Cleveland Heater Company, Cleveland, Ohio, a Corporation of Ohio.

1,761,217. Back-Water Trap. S. Lukomski, Detroit.

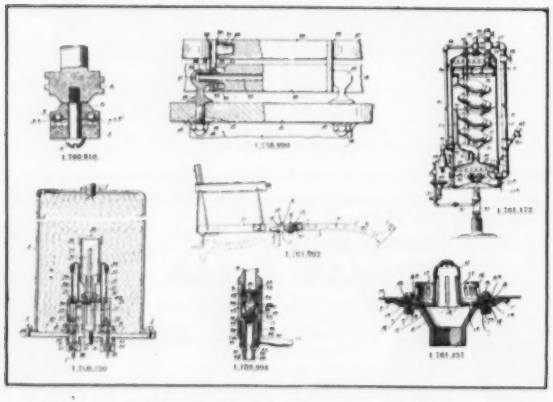
1,759,904. Plumber's Bib. Samuel M. Kass, Philadelphia, Pa.

1,759,990. Hinge Connection for Water-Closet Seats and Covers. Howard C. Leslie, Milton, Mass., assignor to B R E Manufacturing Co., Hyde Park, Mass.

1,760,230. Automatic Electric Water Heater. Mansfield C. Crawley, Groton, N. Y., assignor to Charles D. Davis, Washington, D. C., and William R. Davis, Westfield, N. J.

1,761,172. Water Heater. John D. Betts, Chicago, Ill.

1,761,257. Roof-Drain Fixture. Wells S. Fleming, Portland, Ore.



1,760,810. Faucet. Winslow P. Bradford, Buffalo, N. Y.

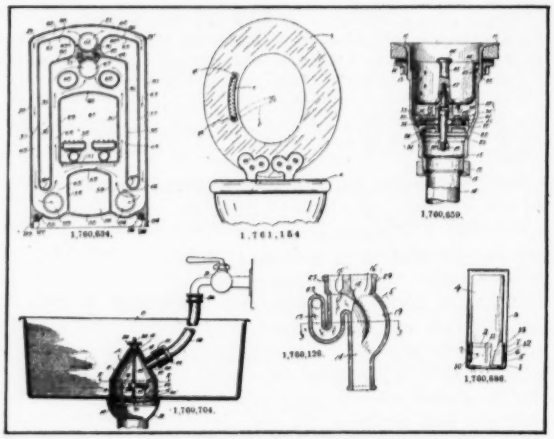
1,761,602. Folding Foot Rest for Toilet Seats. George H. Van Arnam, Fort Wayne, Ind., assignor to Juvenile Wood Products, Inc., a Corporation of Indiana.

1,760,634. Water Heater. August Fliss, Jr., Chicago, Ill., assignor to Evenheat Manufacturing Co., Chicago.

1,760,659. Waste-Pipe Fitting. Abram N. Pasman, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut.

1,760,704. Sink-Pipe Cleaner. John T. Lindstrom, Allentown, Pa.

1,760,886. Holder for Soap Sticks and the Like. Frederick Reutter, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn.

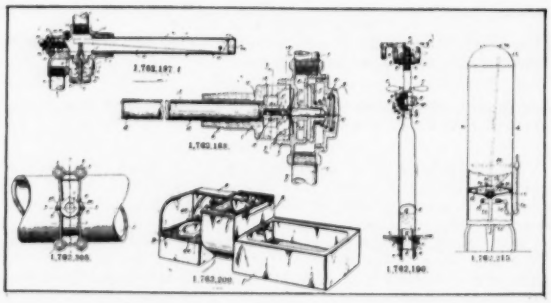


1,761,154. Sanitary Block Holder. Chester Everett Pickering, Ottawa, Ontario, Canada.

1,760,126. Drain Trap. John E. Ehret, Berkeley, Calif.

1,761,411. Water Softener. Samuel S. Sadtler, Springfield Township, Montgomery County, Pa. A composition of matter for the treatment of water, including anhydrous water softening reagents combined with means to indicate when desired degree of softness of water into which said composition may be introduced has been attained.

1,761,116. Composition for Soldering Metals. Karl Geisel, Levallois-Perret, France, assignor, by mesne assignments, to Aluminum Solder Corporation of America, New York, N. Y., a Corporation of Delaware. A composition for soldering metals, particularly aluminum and its alloys, consisting of a mixture of zinc chloride, ammonium bromide and sodium fluoride.



1,763,209. Bathroom Equipment. Owen H. Ayers and Charles Mobley, Dayton, Ohio.

1,762,215. Hot-Water Boiler. Theodore W. Dahlquist, Dedham, Mass.

1,762,305. Service Clamp. Philip Mueller, Decatur, Ill., assignor, by mesne assignments, to Mueller Co.

1,762,187. Thermostatic Valve Control. Clarence H. Morrow, Cleveland, Ohio, assignor to The Hotstream

THE REPUBLIC TRIP LEVER DRAIN

Engineered to 100% Mechanical Perfection

The REPUBLIC BRASS COMPANY
and its subsidiary GRABLER-REPUBLIC, Incorporated
4900 EUCLID BLDG. : CLEVELAND, OHIO

SEVENTY-FIVE years' intimate experience with piping in all its phases is responsible for outstanding quality of Grinnell fabricating service.

GRINNELL COMPANY

Address inquiries to Providence, R. I.

BY SPECIFYING Heggie-Simplex Steel Boilers, architects and building committees for many important structures have endorsed what Heggie's 38 years have accomplished—the most modern of heating boilers, in which scientific design combines every essential with preeminent quality.

HEGGIE-SIMPLEX BOILER COMPANY
JOLIET, ILLINOIS

Representatives in Principal Cities

"X" Boiler Liquid

INSURES your profits on new installations. When the job is finished, a can of "X" is the best assurance for prompt payment of your bill. Repairs sand holes, closes poor threads, split nipples and tightens all loose connections when you turn on the water. Order a carton from your wholesaler today.

"X" LABORATORIES
25 West 45th St., New York, N. Y.

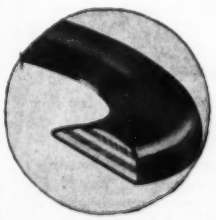
Paragon SELF-CLOSING FAUCETS with renewable seats

SMOOTH ball-bearing action. Patented "Samson" Lock, which makes Paragon handles easiest to adjust without special tools. Longer wear—better action. A wide variety of bodies and handles. Write for folder on the complete line.

Through your Wholesaler

The CENTRAL BRASS Mfg Co.
PARAGON DIVISION CLEVELAND O.

LAMINATED Construction
gives big sales advantage



Laminated construction, exclusive with Brunswick, gives super-strength that defies abuse, enabling us to guarantee Whale-bone-ite Toilet Seats for the life of the building. They end replacement expense once for all. Handsome, permanent finish never wears off seat or hinge. Easy to clean. Always sanitary. Send for free cross-section and complete information of our sales proposition and co-operation. The Brunswick-Balke-Collender Co., Dept. F-28, 623 South Wabash Ave., Chicago.

WHALE-BONE-ITE LAMINATED TOILET SEATS
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Insist on
HAYDENVILLE
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Quality, Satisfaction, and Reasonable Price
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Approved Everywhere

Overton Roof Flashings are approved by contractors and builders. They fit any angle roof from flat to half pitch and make an air and water-tight joint.

Overtons go on extra heavy as well as standard pipe. They're always available through your jobber.

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Minneapolis, Minn.

MOORE
RADIATOR HANGERS

Their wide range of both horizontal and vertical adjustability makes possible quick installation with no going back over the job for a slight miscalculation. Moore Radiator Hangers are made in a variety of styles to take care of every type of radiation. From your jobber.

LOOK FOR OUR CATALOG IN FLEXIBLE HEATING CATALOG

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Double Bottom Hung Wall 611 West Larned St. Detroit, Mich.

FLOOD CONTROL! *for every basement*

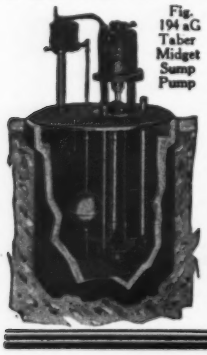


Fig. 194 aG Taber Midget Sump Pump

New LOW PRICES now remove the only possible objection to Taber Sump Pumps.

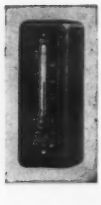
A Taber Sump Pump installation is Positive Automatic Relief from flooded conditions in basements.

Once installed, Taber Sump Pumps need no servicing . . . thus they will save you money.

Write for description and prices. See Page 923, Domestic Engineering Plumbing and Heating Catalog.

TABER
TABER PUMP CO. *Est. 1859*
290 Elm Street, Buffalo, New York

only* $48 *installed



Yet Four Exclusive Features

1 Automatically checks furnace in event of electrical current break.
2 Automatically re-engages after fueling.
3 Three Minute Automatic Action.
4 No gears, electric motors, clocks or dry batteries—nothing to oil.

Thousands are in use.

SHEER COMFORT
heat Regulator

Ask your jobber or write
H. M. Sheer Co., 211 Hampshire St., Quincy, Illinois

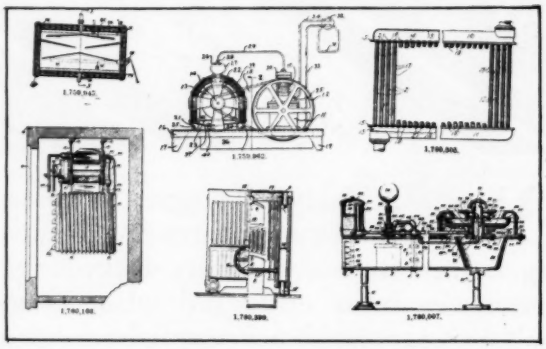
Heater Company, Cleveland, Ohio, a Corporation of Ohio.

1,762,188. Thermostat. Clarence H. Morrow, Cleveland, Ohio, assignor to Hotstream Heater Company.

1,762,190. Valve for Cellar Drains. Charles Noe and Henry Kreiss, Elizabeth, N. J.

Heating Department

1,759,945. Refrigerating Apparatus. Harry B. Hull, Dayton, Ohio, assignor, to Frigidaire Corporation.



1,759,962. Refrigerating Apparatus. Anthony T. Stock, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton.

1,760,007. Oil Burner. William F. Schaller, Alameda, Calif., assignor to M. W. Hendrich, New York, N. Y.

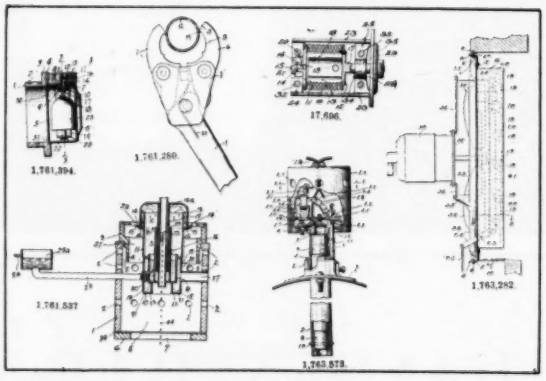
1,760,168. Refrigeration. Frank Desnoyers Peltier, Evansville, Ind., assignor, by mesne assignments, to Servel, Inc., New York, N. Y., a Corporation of Delaware.

1,760,399. Low-Pressure Boiler. Louis Courtot, Paris, France, assignor to American Radiator Company, New York, N. Y., a Corporation of New Jersey.

1,760,505. Radiator and the Like. Edward S. Lea, Morrisville, Pa., assignor to Carrier Construction Company, Inc., Newark, N. J.

1,761,280. Pipe Wrench. Sam Sorensen, Houston, Tex.

1,761,394. Radiator Vent Valve. Edward Jacobus, Newark, N. J.



1,761,537. Oil Burner and Method of Effecting the Combustion of Oil Fuels. Wilfred Francis Ravenor, Vancouver, British Columbia, Canada.

17,696. Thermostatically-Controlled Valve Unit. Jean V. Giesler, Knoxville, Tenn., assignor, by mesne assignments, to The Fulton Sylphon Co., Knoxville, Tenn.

1,763,282. Ventilating Apparatus. Merritt A. Vining, Grand Rapids, Mich.

1,763,573. Thermostatically-Actuated Electric Control. Walter W. Williams, Bloomington, Ill., assignor to Williams Oil-O-Matic Heating Corporation, Bloomington, Ill.

New Trade Literature

Catalog of Pierce, Butler & Pierce Mfg. Corp.

Pierce, Butler & Pierce Mfg. Corp., of New York City, has just issued a catalog of boilers and radiators. The catalog is designed to comply with the requirements of the American Institute of Architects and to fit in the standard files designated by this institute. The catalog describes and illustrates various types of boilers and radiators, radiator valves, etc. Technical data are also included.

Catalog of Oil City Boiler Works

Oil City Boiler Works, of Oil City, Pa., has just issued a catalog of its all steel fire-box boilers. A stoker-unit firebox boiler is shown in cross section, and a diagram, technical description and specifications are given. Return tubular firebox boilers, oil-burning boilers, welded steel heating boilers, smokeless and direct draft heating boilers are also described in detail.

Compound Injector & Specialty Co.'s New Catalog

Compound Injector & Specialty Co. of Chicago has just issued its new catalog "Number Thirty" under the title of "Plumber's Modern Garage Drainage Installation Catalog," the front cover of which is shown herewith in miniature. The catalog consists of 20 pages, 7¾ by 10¾ inches in size. It illustrates and describes in detail the company's products, including garage, laundry, stable, residence and public building floor drains, grease traps with and without coolers, automatic water softening and scale removing devices, closet bends, catch basins, etc. In this connection it may not be amiss to state that there has been no change in this company's name as was erroneously stated in a recent advertisement in DOMESTIC ENGINEERING, and George J. Dehn, who established the business in 1897, is still the president and general manager of this concern.

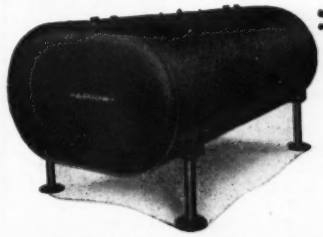
Bulletin of Autovent Fan and Blower Co.

Autovent Fan and Blower Co., Chicago, has just issued its Bulletin No. 87, describing its blowers and exhausters. Construction data, performance and dimension data are given, as well as information on how to figure correct ventilation. Construction specifications and performance tables are also given. Bulletin No. 89 describes portable fans for industrial cooling and drying.

Catalog of Titusville Iron Works Co.

The Titusville Iron Works Co., Titusville, Pa., has issued its Catalog 96, consisting of twenty pages, illustrative and descriptive of its entire line of welded steel boilers. The catalog presents the ten types of boilers manufactured by the company in highly colored, full and cross-sectional views. Dimensional sizes, performance data, convertible features, capacities, ratings and full particulars of each type are included in the pages. Diagrams for concrete foundation plans showing necessary dimensions

"UNCONDITIONALLY GUARANTEED"



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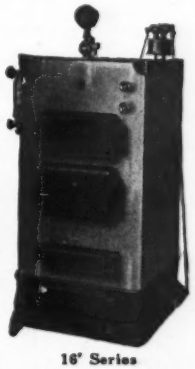
Underwriters' Labeled Oil Storage Tank furnished complete with Lug Supports, and Magnetic Type Float Gauge.

Six or more tanks, each $22.00 F. O. B. Baltimore. Order now for summer installations.

The NOVELTY STEAM BOILER WORKS Company
Clare and Kloman Streets » » Baltimore, Maryland

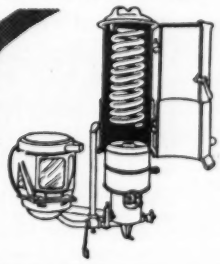
YORK
Jacketed Heater



BLACK AND RED
Color Harmony built around the most dependable Jacketed Heater on the market.
Water Tubes directly over FIRE — a positive fuel saver.

ABENDROTH BROTHERS
"Nearly a century in business"
Factory and main office:
PORT CHESTER :: NEW YORK
16' Series

Standard Copper Water Tube
»
Extra Heavy Copper Water Tube
»
Copper Service Pipe for Underground
»
Seamless Copper, Brass and Aluminum Tubing
Send for Specifications and Prices
WOLVERINE TUBE CO.
SEAMLESS COPPER BRASS & ALUMINUM
1469 Central Ave Detroit, Mich.



Ask your Jobber or write us for full information about
OHIO *Kerosene* HEATERS
Ohio Kerosene Heaters have a reputation to live up to . . . . .
And they always make good.
OHIO HEATER CO.
Columbus, Ohio, U. S. A.

Why Milwaukee's prices are lower—

"Junior Lines" have appeared. This is the last resort by some manufacturers to meet the demand of the dealer who is dominated by "close buyers." Milwaukee Flush Valve Co. are enabled to offer acceptable low prices without the aid of an inferior "Junior Line," because they have simplified their products, eliminated obsolete machinery and adopted modern production methods.

JUDELL

MILWAUKEE FLUSH VALVE CO.
Dept. D 111 Milwaukee, Wisconsin, U. S. A.

Plumbers everywhere are making attractive profits installing Wade Backwater Gate Valves. Your customers are looking for Wade protection and you're missing a big profit bet when you don't sell them.

Wade
The possible dream

Ask us about the Wade line

Wade Iron Sanitary Mfg. Company
1717 Canal St.
Chicago, Ill.

A Choice of the Best

That's what you get in replies from a DOMESTIC ENGINEERING Classified Advertisement.

No matter what your problem—if you want a job, or a man for a job, if you have some used equipment to sell or want to buy some, if you want to know what the leading books on plumbing and heating are, if you want bids on a job—a DOMESTIC ENGINEERING Classified Advertisement will solve that problem.

Domestic Engineering
1900 Prairie Avenue, Chicago, Illinois

for both coal and oil burning types are also given, as are illustrations of integral parts of the products.

Booklet of Everson Filter Co.

Everson Filter Co., of Chicago, has just issued a booklet discussing electric chlorination. How water in swimming pools is treated by electric chlorination is explained, and a description of the equipment and the method of its operation is given. A table shows requirements for pools of different capacities. A form for specifying the company's electric chlorinator is also included.

Facsimile of First Catalog of Stanley G. Flagg & Co., Inc.

Stanley G. Flagg & Co., Inc., of Philadelphia, has just issued a booklet containing a facsimile of the first catalog issued by Stanley G. Flagg, founder of the company. The catalog was issued in 1866. A replica of a series of sales book entries dated April, 1855, is also included, as well as a picture of the works in 1854.

Catalog of The Afco Mfg. & Sales Co.

The Afco Mfg. and Sales Co., of Cleveland, Ohio, has just issued a general catalog of its special traps and fittings, including floor and shower traps, adjustable and regular bath traps, brass traps and ferrules, boiler repair plugs, etc. The catalog contains numerous illustrations.

Circular of Watts Regulator Co.

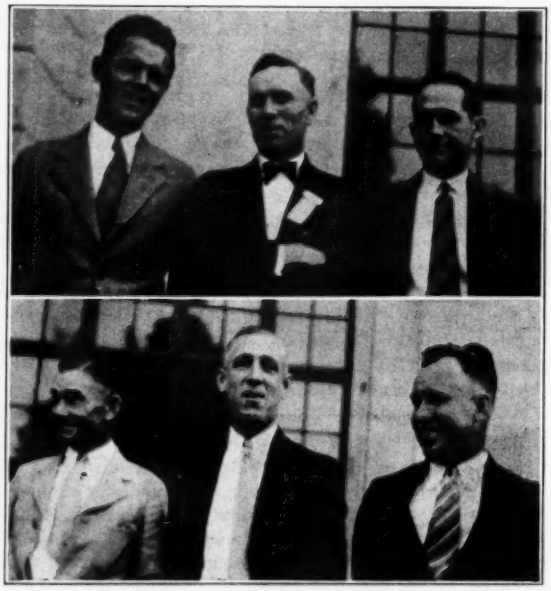
Watts Regulator Co., of Lawrence, Mass., is sending out a circular describing its hot water house heating unit, consisting of three parts, a strainer, a water pressure reducing valve and a pressure relief valve.

Folder of W. H. Johnson & Son Co.

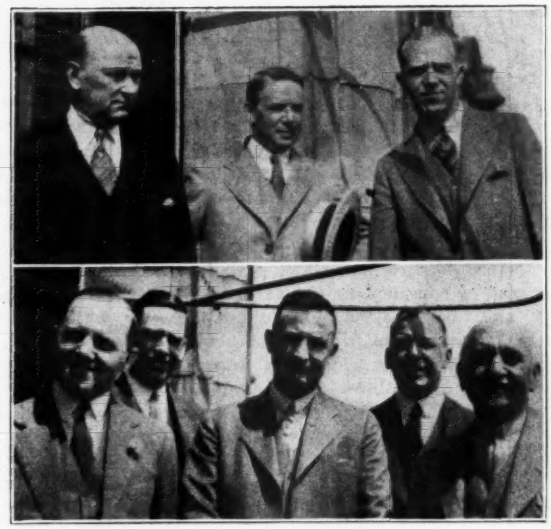
W. H. Johnson & Son Co., of New York City, is distributing a folder describing the company's radiator furniture. The folder illustrates several radiator cabinets of different types.

Quaker Mfg. Co.'s Booklet

Quaker Mfg. Co., of Chicago, has just issued a booklet describing its oil-burning water heaters, circulators, warehouse heaters, etc. Several envelope stuffers have also been issued by this company. One with the caption, "Care-Free Warmth in Zero Weather!" describes a garage and



Top row: Jack Curry, Woodward-Wanger Co., T. M. Rust, H. S. Bullen, American Radiator Co., all of Norfolk. Bottom row: Alex. Ellington, Norfolk; E. D. Duval, American Radiator Co.; E. B. Hungate, Norfolk. Photos taken at convention of Virginia Associated Plumbing and Heating Contractors



Top row: L. W. White, Brunswick-Balke-Collender Co., New York City; R. C. Bolsinger, president, Fowler & Wolfe Mfg. Co., Norristown, Pa.; George H. Lang, Josam Mfg. Co., Philadelphia. Bottom row: C. O. Struse, J. N. Ruth, H. M. Carey, Harvey C. Bell, F. C. Eckfeldt, vice president, all of Hajoca Corp., Philadelphia. Photos taken at the convention of the Pennsylvania State Association of Master Plumbers

general utility heater. "Modern Care-Free Oil Heat" is the title of a folder featuring its oil burning stove.

Bastian-Blessing Co.'s Circular

Bastian-Blessing Co., of Chicago, has issued a circular describing its precision regulator, a two-stage duplex regulator in one unit. A technical description is given, in which twelve important facts concerning the construction and operation of the regulators are explained. Two illustrations are included.

Circular of Bryan Steam Corp.

Bryan Steam Corp., of Peru, Ind., is sending out a circular with the caption, "Specialized Boiler Design." The folder is illustrated in colors, and describes its copper-tube boilers for use with oil burners.

Circulars of Kewanee Boiler Corp.

Kewanee Boiler Corp., of Kewanee, Ill., is distributing a circular with the caption, "The age dictates a harmony of color for interior effects." One of the concern's slim type radiators is illustrated in purple and one in blue. Another circular gives a diagram of a steel boiler for small buildings.

Robertshaw Thermostat Co.'s Circular

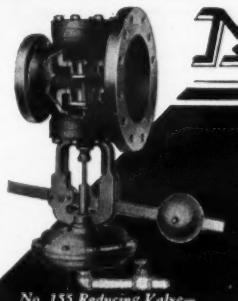
Robertshaw Thermostat Co., of Youngwood, Pa., is sending out a circular describing its furnace thermostat. A diagram of the thermostat is given, and its operation is explained. The method of securing room control is outlined.

Circular of Buffalo Forge Co.

Buffalo Forge Co., of Buffalo, N. Y., has issued a circular describing apparatus for eliminating and recovering dirt and dust. Centrifugal washers, gas scrubbers and scrubber washers are included.

Circular of Mercoid Corp.

Mercoid Corp., Chicago, is mailing the trade a circular describing a new thermostat of its make. The thermal element, it is stated, protrudes from the front of the instrument and is exposed directly to the atmosphere. The encased fluid actuates a plunger by means of the inner bellows which operates the movement by throwing the switch to "on" or "off" position.



McALEAR

. . . Up-to-the-minute—not only in completeness but also in design, engineering and construction—McAlear's Automatic Pressure and Level Controls are dependable, efficient units for ALL your specialty requirements. . . . Write for complete information.

No. 155 Reducing Valve—Will control sensitively and accurately for subatmospheric pressures or any reduced pressures up to 10 pounds.

THE McALEAR MFG. CO.
1901-07 S. Western Ave., Chicago
Sales Engineers in all Principal Cities

It's all YOUR profit when you install---

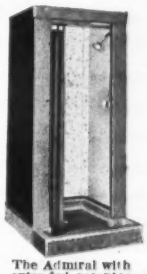
Fiat Shower Bath Compartments and Shower Doors

The FIAT Shower Bath Compartment is sold to and installed by the plumbing trade.

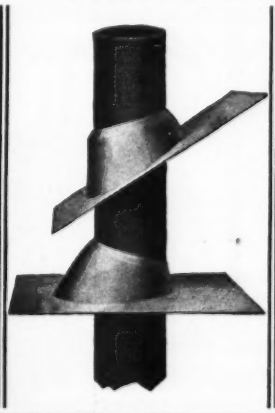
FIAT Shower Bath Compartments are not a component part of the building—contraction, expansion or settling cannot affect them — leakproof, trouble-free. Made in many sizes and designs; knock-down construction—installed on rough or finished floors.

Write for full particulars.

FIAT METAL MFG. COMPANY
1211 Roscoe St. Dept. 67 Chicago, Ill.



The Admiral with extended receptor and curtain.



JUNIOR Cast Lead FLASHING

For a rigid, leak-proof, quickly applied flashing, use the Junior Cast Lead Flashing.

Makes a neat appearing job that lasts for the life of the roof.

From your jobber

Simplex Manufacturing Co.
2044-46 N. Ashland Ave.
Chicago :: Illinois

Quick, Easy Installation of All Wall-Hung Radiators

Install radiators this modern way—hang them from the wall with E-Z Radiator Hangers. Better looking, more sanitary, easily installed and inexpensive.

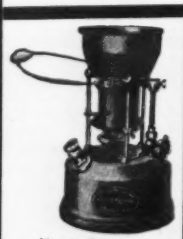
Three styles for ALL installations. Leading architects and contractors recommend and use them. Write for complete information.

HEALY-RUFF CO.
770 Hampden Ave. St. Paul, Minn.

Style "C"

Also Manufacturers of E-Z INSERT

QUALITY THAT COUNTS!



No. 40 Pump
No. 39 Bulb
1 Gallon Gasoline
Covered by Patents

To plumbers who know good furnaces and torches, there is only one make they ask for after they have tried the "ALWAYS RELIABLE" brand. Their leadership has come as a natural climax through years of progressive experience.
Many thousands of plumbers consider the "ALWAYS RELIABLE" furnaces and torches the most practical and durable made. They know these furnaces and torches combine speed, economy, and dependability. Order through your jobber who will give you prompt service and satisfactory prices.
Also specify for "ALWAYS RELIABLE" plumbers' tools.

OTTO BERNZ CO., INC.
Newark : New Jersey

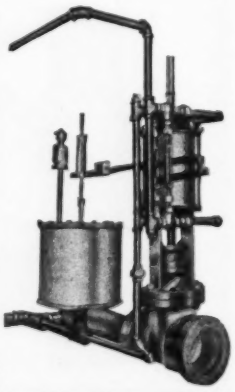
"AMERICAN SEAL"
PIPE JOINT CEMENT

The use of "American Seal" Pipe Joint Cement will absolutely eliminate troublesome and costly, leaky installations. It will not dry out and what is more it is unaffected by heat or cold. Be on the safe side all the time—use "American Seal" on every job.

William Connors Paint Mfg. Co.
Troy .. N. Y.

THE SENTINEL
Safety Sewer Valve

The Spring flood season demands complete protection from sewer back-up. Without it, property will be damaged and health endangered by the inevitable back flow of overtaxed sewers. The Sentinel Safety Sewer Valve is 100% prevention. It is the only mechanical device that operates automatically without human attention or electric current. Its gate valve closes and opens under hydraulic pressure. Its powerful action never fails. Write for particulars.



LITTLE GIANT MFG. CO.,
1407 Third Ave. S., - Minneapolis, Minn.

Water Softener
specifications are best met by using
Zeolite Upflow Softeners
The economical and efficient method of producing soft water.

PARAMOUNT WATER SOFTENER
CORPORATION
91 West St. New York

Bath a Day Movement

Publicity is a modern necessity. Great industries have made use of it to accomplish those objects which could not be put into direct advertising. And retail merchants who have been alive to its value have supplemented their advertising efforts with publicity work which has been of value in itself and which has increased the value of their advertising efforts.

The object of publicity is to familiarize the public with the name of a company and with its service. It should be used to complement the value of the regular advertising, and to get to the public those ideas for which there is not always room in advertising space.

The Bath a Day movement affords an opportunity to get over some of these ideas, and "The Story of the Bath" has proved an effective medium. From educators, doctors and business men has come unqualified commendation.

Write for a free copy of this booklet. Read it, and you will see why it has been so valuable to plumbing contractors and associations in securing favorable publicity. We'll give you full particulars.

Epigrams—For Your Use

No surer method of practicing economy has yet been found than intelligent buying.

* * *

Our most profitable investment has been in satisfying our customers.

* * *

A comfortable home is more to be desired than great riches.

* * *

Pure air is a precious thing; don't waste it by improper heating.

* * *

Good judgment is the stepping stone to success.

* * *

The fruit of good judgment is in having what you want.

* * *

It costs more to avenge a wrong than it does to let it go by default.

* * *

Late to bed and early to rise is the sad tale of the homeowner without automatic heat control.

* * *

Good plumbing like a good name is worth all it costs.

* * *

Few people are as poor or as bad as other people think they are.

* * *

If you want to free yourself from household drudgery, automatic heating is the answer.

◆

Paterson, N. J.—Frank Corrado and associates have organized and incorporated the Corrado Plumbing and Heating Company, with a capital of $20,000, to establish and operate a plumbing and heating contracting business. The new concern is represented by Michael Stein, local attorney.

◆

Long Beach, N. Y.—The firm of M. J. O'Rourke and Sons, Inc., has been chartered, with a nominal capital of 500 shares of no par common stock, by M. J., L. A. and F. B. O'Rourke, to establish and operate a plumbing and heating contracting business. J. M. Detjen, 261 Madison avenue, New York, represents the new company.

Business Changes

Saranac Lake, N. Y.—The Davidson & Miller plumbing and heating firm at 119 Broadway is now conducted as a partnership instead of a corporation.

De Kalb, Ill.—Ralph Ashelford, for the past fifteen years engaged in plumbing business and for a number of years connected with the firm of John Dunn & Son, is now operating his own plumbing business.

Detroit, Mich.—The Miller Plumbing and Heating Co., 10537 Mack avenue, has been organized with a capitalization of $25,000.

Derby, Conn.—The business of the E. W. Peck Co. at 286 Main street, has been purchased by Walter Keller, for twenty years in the employ of the Peck company.

Wausau, Wis.—The National Heating and Ventilating Co. has moved from its former quarters at 111 Clarke street to 515-517 Third street.

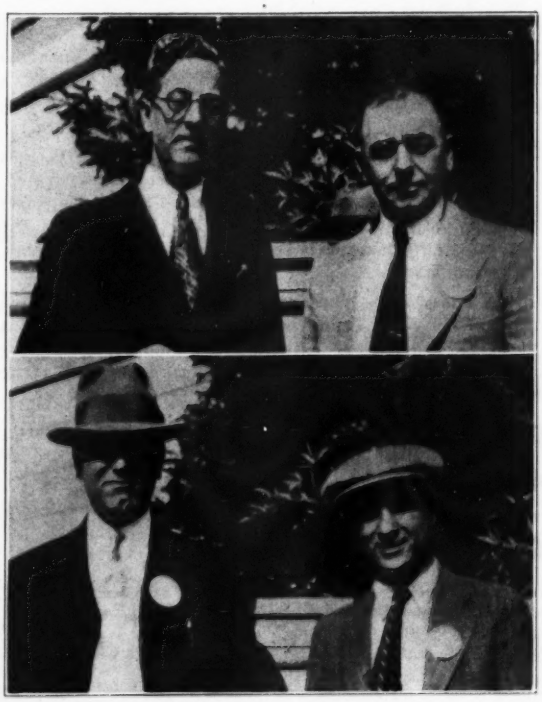
Boston, Mass.—Ingalls & Kendricken, Inc., announces its removal from its former location at 14 Chardon street to new quarters at 106 Merrimac street.

Pawnee, Nebr.—Glenn Wade has moved his plumbing business to new quarters in the Wilson business building, and has opened a showroom in connection with his shop.

St. Paul, Minn.—C. A. Webber, formerly engaged in the plumbing contracting business at 193 McBoal street, has moved to California and at present is undecided as to whether or not he will return to enter in business in St. Paul.

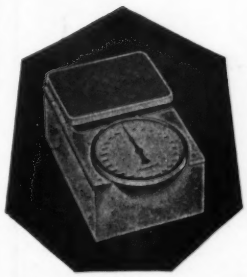
Ellsworth, Ia.—Carl Olson has purchased a half interest in the Waterman Plumbing and Heating Co. In the future, the company will be known as the Olson and Waterman Plumbing and Hardware Co.

Gilmore, Ia.—Clifford Warren has moved his plumbing



Top picture: Phillip A. Mason, supervisor of buildings, Hartford; Robert Davidson, Hartford. Bottom picture: L. A. Wick, Burnham Boiler Corp.; A. Richitelli, New Haven. Photos taken at the convention of the Connecticut State Association of Master Plumbers

Sell This



A bathroom or health scale that can be sold for $12.00. Larger model for $15.50. Attractive with appealing lines, colors. Six-spring mechanism, 250-lbs. Guaranteed for life. This scale cannot tip. Write for prices.

HANSON SCALE COMPANY
546 North Ada Street, CHICAGO

Improved "WILHELMI"

Just to be sure that there is going to be no question on any point, after installation, install the Improved Wilhelmi Copper Range Boiler.

We'll be glad to send details

HAYES MANUFACTURING COMPANY, Makers
Paterson - - - New Jersey

GENUINE NASON STEAM TRAPS
UPKEEP
KEEP DOWN

NASON MANUFACTURING CO.
71 FULTON ST. NEW YORK N.Y.
Steam Specialty Specialists Since 1841

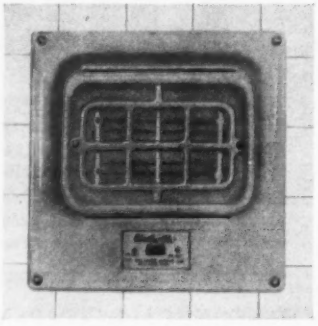
For All Lead Work

YAGER'S Soldering Salts

Put in a supply of this excellent soldering salts now. Use it on all lead work. It makes a better, cleaner job certain.

Alex R. Benson Co., Inc.
Hudson New York
For list of distributors see 1930 McRae Blue Book
Canadian Sales Agency: Canadian General Electric Co., Ltd., Toronto and Montreal

Write today to Dept. "D" for free sample of Yager's Soldering Salts



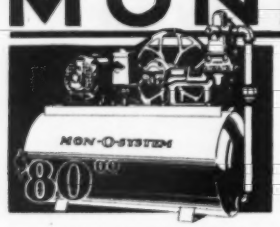
NO. 200 ELECTRO-GLO

Now
SAFE HEAT

Electro-Glo electric wall heater gives your customers that extra heat necessary for bathroom, breakfast nook or nursery—and Electro-Glo gives it with extra safety, absolute cleanliness and reasonable cost. Expertly built, easily installed, faultless in operation. Write today for full details.

The Bellaire Stove Co.
Bellaire Ohio

MONARCH



Capacity 250 gallons per hour. 20 gal. galvanized tank . . . completely assembled ready to install. All for only $89.00.

The new MON-O-SYSTEM sets new standard of values in lower price range.

Your opportunity to meet competition on its own ground—offer more for the money.

Monarch standard of excellence of manufacture maintained. Profits not fritted away on service calls.

Get Catalogue E at once.

The Monarch Engineering Company, Dayton, Ohio

PUMPS AND SYSTEMS

Put Warnocks in your shop now. They last three times as long. They can't slip and they wont mar the surface. The man on the job wants and needs a Warnock.

Write today for full details of sizes and prices. You'll find that Warnocks are not priced higher than ordinary wrenches.

WARNOCK MFG. COMPANY
Worcester Massachusetts

contracting business from the McComerick building to new and larger quarters in the Kydd building. Mr. Warren has opened a hardware store in his new location, which will be run in connection with his plumbing business.

Des Moines, Ia.—The Sanitary Plumbing and Heating Co. has moved from 4044 East Fourteenth street to larger quarters at 726 Morton street.

Detroit, Mich.—McIntyre-Stradley Co., plumbing and heating contractors, have moved from 10210 East Warren street to 35 Charlotte street.

New Business Ventures

Portland, Ore.—Oregon Plumbing and Heating Co. has been organized by A. J. Matot, 514 Morgan building.

Saginaw, Mich.—W. Dixon, 401 Lapeer street, has incorporated his plumbing and heating business under the name of W. Dixon Brown Co., with a capital of $5,000.

Brooklyn, N. Y.—The Wasserman Plumbing Corporation has been organized and incorporated, with a capital of $5,000, by L. J. Wasserman and associates, to establish and operate a plumbing engineering and contracting business in Queens county. The new firm is represented by H. D. Levy, 26 Court street.

Brooklyn, N. Y.—The Carl Heating and Plumbing Company has been organized and incorporated, with a capital of $10,000, to establish and operate a heating and plumbing contracting and engineering business. The new concern is represented by D. Adelman, 261 Broadway, New York City.

Buffalo, N. Y.—The Federal Heating Corporation has been organized and incorporated, with a capital of $20,000, to establish and operate a heating contracting business. L. Klapper, 1540 Broadway, New York City, represents the new firm.

Brooklyn, N. Y.—With a capital of $5,000, the Sutter Avenue Plumbing and Heating Corporation has been organized and incorporated, to establish and operate a plumbing and heating contracting business. The new concern is represented by Isaac Kushner, 26 Court street.

New York City—With a capital of $10,000, the Wright Heating Company has been organized and incorporated, by A. J. Wright and associates, to establish and operate a heating contracting and engineering business in the Bronx. The new concern is represented by A. B. Kronish, 154 Nassau street.

Union City, N. J.—The Certified Heating and Plumbing Company has been organized and incorporated, with a capital of $125,000, to establish and operate a heating and plumbing contracting and engineering business. Otto Saldarini represents the new firm.

Blake "Blasco" Backwater Valve for Floor Drains

Here is a handy valve that can be installed in any of our Floor drains, whether drain is already in use or if desired to convert a stock item to backwater protection. Valve is of brass, and forms a sand arrester. It is threaded iron pipe to screw into tapped opening of the bowl and is fitted with a high grade rubber seat.

Simply drop float ball into trap and screw in the valve and all is ready for perfect and automatic action.

We make the longest line of Plumber's Cast Iron Specialties in the United States.

Write for catalog.

Your jobber will be glad to service you on anything you may need.

BLAKE SPECIALTY COMPANY :: Rock Island, Ill.

CLASSIFIED ADVERTISING

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion.

One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.

Situations Open

SALESMEN—AN OLD ESTABLISHED house making a full line of plumbing specialties in brass, leather, rubber, etc., could use local representatives in the principal cities of the United States to sell their line, either whole or part time, on a straight commission basis. A very liberal proposition with full settlement at end of each month. This is a high-grade line, with many exclusive items. Will bear the closest investigation. We will not consider anyone who does not at present have a trade acquaintance in their respective city. If you are a resident of one of the larger cities and have a following among the plumbing trade, we can put you in a position to make good money, providing your territory has not yet been allotted. Reference required. All replies treated in strict confidence. Address, stating qualifications, etc., Key 369, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

Increased activity in rapidly expanding markets has made it necessary to increase the number of our representatives. Sales engineers experienced in these or similar lines are invited to write. If your territory is open, this may mean a valuable connection.
JAS. P. MARSH & COMPANY
Division of Commercial Instrument Corporation
2073 Southport Avenue, Chicago, Ill.

EXPERIENCED BOILER AND RADIator salesman wanted for Pittsburgh district. State age, references, and experience. All replies will be held in confidence. A complete stock of radiators and boilers is carried at our Pittsburgh warehouse. FEDERAL RADIATOR COMPANY, Zanesville, Ohio.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

THE MANUFACTURER OF THE EVERSEAT TANK BALL desires several live wire energetic salesmen. Several desirable New England territories open. Address JEPCO MFG. COMPANY, 140 Tyler Street, Boston, Mass.

WONDERFUL MONEY-MAKING EXclusive or sideline proposition for salesmen calling on plumbing dealers. Write us today. KOIL-LES HEATER COMPANY, Geneva, Illinois.

Situations Wanted

SALESMAN WITH TWENTY-FIVE years' experience in middle western territory with excellent following in Chicago, wishes to represent manufacturer in this territory. Best of references. Address Key 525, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

COMBINATION MAN WANTS STEADY position in good town, where living conditions are good. Wages no object. Address Key 528, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

POSITION WANTED: MAN WITH twenty years' experience in plumbing and heating would like position as working Partner, Estimator or Foreman. Best of references. Address Key 529, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

Government Proposals

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. June 23, 1930.—Sealed proposals will be opened in this office at 3 p.m., July 21, 1930, for furnishing all labor and material required for new plumbing fixtures, etc., in the U. S. custom house and court house at El Paso, Texas. Drawings and specifications may be obtained from the custodian at the U. S. custom house and court house at El Paso, Texas, or at this office in the discretion of the supervising architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C. June 23, 1930.—Sealed proposals will be opened in this office at 3 p.m. July 22, 1930, for furnishing all labor and material required for installing certain new plumbing fixtures, piping, etc., in the court house and post office at Cincinnati, Ohio. Drawings and specifications may be obtained from the custodian at the U. S. court house and post office, Cincinnati, Ohio, or at this office in the discretion of the supervising architect. Jas. A. Wetmore, Acting Supervising Architect.

Wanted To Buy

WANTED: USED TOLEDO PIPE DIES, 2½" to 6"; used pipe cutters, 2½" to 6"; used vise, 2½" to 6". Quote price in first letter. Address Walter S. Duggans, 11 N. College, Fayetteville, Arkansas.

For Sale

FOR SALE: ONE (1) STOEVER PIPE Threading Machine, ¾ inch to 4 inches with motor. One (1) Stoever Pipe Threading Machine, 1¼ inches to 6 inches without motor. Machines in good condition. Address P. O. Box 964, Lancaster, Penna.

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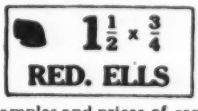

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ADOPTION of oxy-acetylene welding for piping installation is typical of the progressive spirit of the plumbing and heating industry. Higher efficiencies — greater economies — point to oxwelding as the most modern method for pipe joining.

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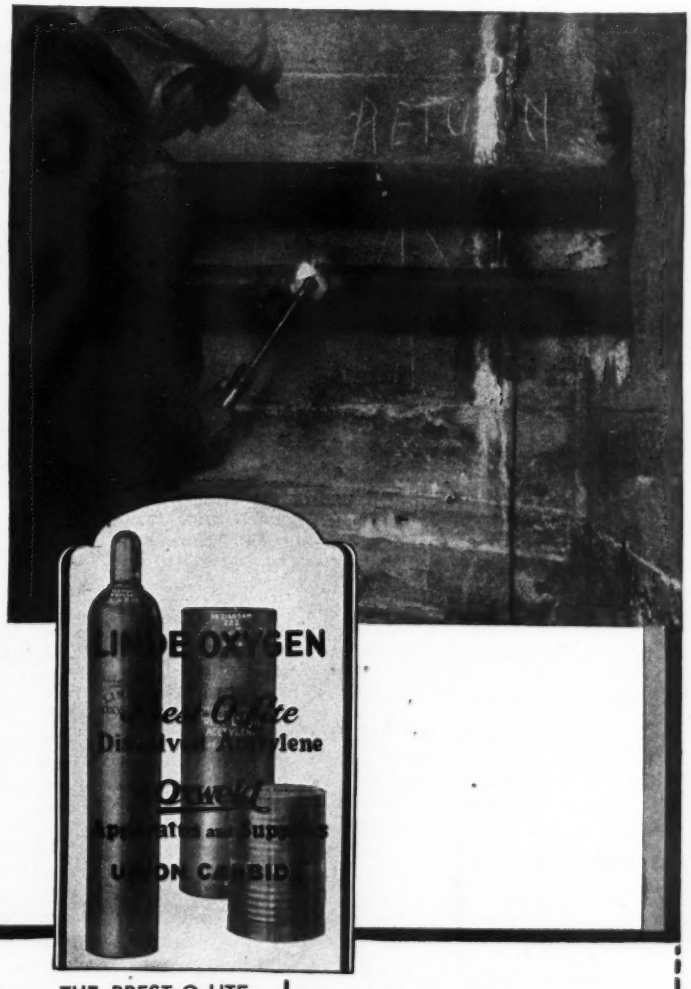
Your own men, qualified plumbers, pipefitters or steamfitters can be taught to weld. Linde Service Engineers are glad to cooperate.



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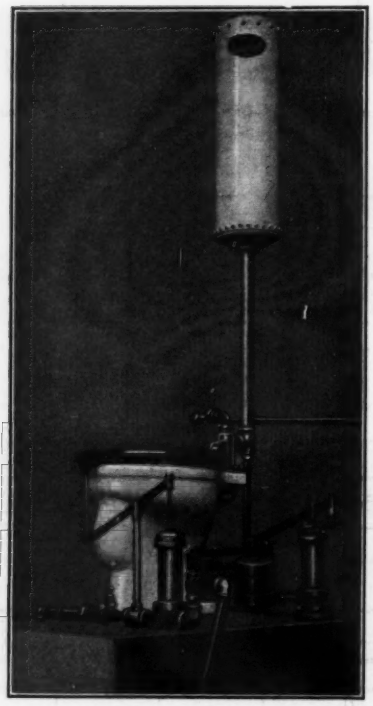


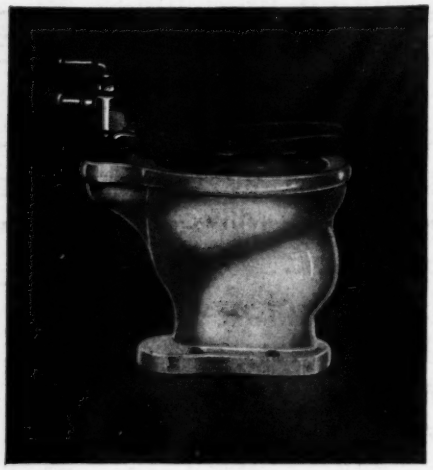
Showing automatic Device by means of which this Vogel Number Ten Closet has flushed day and night for a year.

SINCE JULY 16, 1929

This VOGEL Number Ten Closet on an endurance test has flushed day and night for a year—and not even a washer has been renewed.

The Test Continues Indefinitely

Install the VOGEL Number Ten in Schools, Institutions, Plants, Waiting Rooms, Office Buildings and Places of Amusement.



Vogel Selflush Number Ten-A seat-action closet combination, with tank concealed.

July 16, 1929, this VOGEL Number Ten Closet was taken from stock and placed on an endurance test. By means of an automatic device it has flushed day and night, continuously since last July—a total of more than 149,000 times, which is equivalent to more than 40 years' use.

In this test actual operating conditions prevailed. The seat lowered, the tank filled, the seat raised and the closet flushed.

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We are telling your customers about the endurance test in the publications they read and by means of direct-by-mail going to school boards, factory and mill owners, and heads of institutions.

Furthermore, if you want folders or blotters imprinted with your name and address, to help you get more of these profits let us know how many and we'll send them promptly.

See inside front page for VOGEL *Frost-Proof advertisement.*

Also see pages 90 and 91.

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Wilmington, Del. St. Louis, Mo.

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